The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOLUME LI CHICAGO, ILLINOIS, DECEMBER 5, 1908 NUMBER 23

Original Articles

THE TREATMENT OF LOCOMOTOR ATAXIA.

ALLAN McLANE HAMILTON, M.D., F.R.S.E.

NEW YORK.

As a rule there is a disposition on the part of physicians, particularly specialists, who diagnose locomotor ataxia, to give a prompt and unfavorable prognosis, and to dismiss the patient with a few words of gloomy advice and perfunctory pity. It is for this reason that the victims of this serious disease of the nervous system fall into the hands of quacks and irregular practitioners, who promptly proceed to suggest and try fanciful remedies, and empty the pockets of a class of patients who grasp too readily at therapeutic straws.

To those who see much of this and like diseases it is a patent fact that there is always a liability to suggestion which seems almost characteristic and inseparable from the condition of invalidism.

An apparent improvement attends the administration of any new remedy, especially if it possesses novelty and is invested with a mystic import. For this reason one individual who has been in the local courts has made a large fortune from "magic" boots, which are sold at enormous prices, while a vast number of sheep and goats have contributed a part of their genitalia for the production of an equally profitable lymph.

For a time all such invalids declare in triumphant tones that they are getting well and that the regular physician is an ignoramus. Sooner or later, however, the novelty ceases and there is a relapse. An experience of a great many years has made me familiar with all this, and I have been impressed with the wisdom of antagonizing the quack and working as long and faithfully as possible for the patient's welfare, although the outlook is often discouraging. I think this is also the view of my friend, Dr. Dana, who has had unusual therapeutic success.

Two classes of cases present themselves. One includes about 60 per cent. of all patients in whom there is a specific cause, and in whom the tabes is due to a parasyphilitic infection. This is progressive and usually incurable, but even this may be greatly modified if not arrested by intelligent treatment. The cases that form the other 40 per cent. are not only greatly helped but often cured.

Of course the existence of arthropathies, lost reflexes and atrophy of the optic nerve indicate neural disease that has gone on to actual destruction; but there are other symptoms which if treated with appropriate remedies will repay all the efforts of the physician.

Bearing in mind the luetic causation of so large a proportion of cases of tabes, we naturally turn to the use of one of the two universally used drugs that are available to combat specific disease of all kinds; but it must be admitted that only in a very small proportion of examples of tabes, as well as other organic nervous disease due to parasyphilitic causation, does the use of mercury and the iodids do any natural good. In fact, it has been often alleged that specific treatment is apt to do harm. In a small number of suitable cases, say 20 per cent., the employment of the former especially is serviceable. In some patients the disease develops very rapidly, and the early stage merges quickly into the second in such a way as to suggest the energetic activity of a syphilitic toxemia. I have known many such cases in which, within two years after there were recognizable initial symptoms, there would be well-developed ataxia. In other cases, in which there were attacks of paralysis of the ocular muscles, the exhibition of iodid or the use of inunction would prove of the greatest service almost immediately.

Again, in the mixed types it is clearly indicated. In this connection I may refer to a patient who had his initial sore six years ago, and in whom no symptoms of any kind developed until the spring of 1908. There were then vague, fulgurating pains, Argyll-Robertson pupils, loss of knee-jerks on the right side, and a static ataxia. There were no bladder symptoms, but there was constipation. One month ago (October, 1908) the patient came to me. He was then able to walk but in a disorderly way, there being no true locomotor ataxia. Two days after his arrival there was complete loss of power in both legs, loss of both knee reflexes, exaggerated plantar reflexes, increase in tactile, pain and thermic senses, no incontinence of urine but frequent priapism, inequality of the pupils and no reaction to light. The patient was immediately put on an inunction of mercury, large doses of iodid and ergot, with the result that in two weeks there was slight return of power. Here, then, was a probably irregular subacute myelitis, chiefly located in the dorsal spine. It had been diagnosed at home as tabes.

Profiting by the teachings of Russell Reynolds, a clever English physician, whose work in the seventies, as the result of an illogic reverence for all that is German in medical literature, has been almost forgotten, I have for years used, and with encouraging success, the bichlorid of mercury, either in small doses by the mouth or by inunction by means of some readily absorbable agent, and this has acted better than any other mercurial salt except perhaps the protoiodid. By inunction it is superior to any of the oleates or better-known salves or emulsions. Nitrate of silver or other drugs of the kind are, of course, useless and obsolete.

The treatment of special symptoms is, I am convinced, of great importance, and most encouraging results are possible, so that we should direct our attention

to the modification of the pains, the ataxia and the cystitis which is so important a feature.

The treatment of pain is often most difficult, and a long list of remedies of more or less popularity have been utilized, often with little or no success. Pyramidon is about the best of the coal-tar remedies, but none of them is of much use except in dangerous doses when the pains are severe or of long standing. A careful record and study of nearly every case will show that the barometric changes have much to do with the pains, and it is for this reason that they are often called rheumatic. If this influence can be determined large doses of one of the salicylates or of aspirin may be recommended. The most effectual remedy, of course, is morphin, and it is my experience that if it is used under a physician's direction there is very little danger of producing a habit. Prolonged warm baths will often diminish the pain without any other treatment, and if proper apparatus is available a more extended kind of hydrotherapy may be prescribed. Gastric crises are often associated with intestinal disturbance and sometimes with autotoxis. Dietetic regulation should, therefore, be instituted, as well as the administration of antiseptics, especially hexamethylenamin, or borax. The crises of pain occasionally yield to the analgesics just suggested, as well as to the nitroglycerin in frequently repeated small doses. We may at the same time apply the actual cautery, or cup the dorsal region.

Several forms of systematic exercise have been recommended for the ataxia, that of Fraenkel being perhaps the best. The idea is to train the individual so that he may be able better to coordinate, thus overcoming the ataxia. Directions for the use of this series of exercises may be found in several of the standard textbooks; others will suggest themselves to the practitioner, who should study the necessities of each case and the details of the disorderly movements. I have been in the habit of utilizing a modification of the "setting-up" military drill. It is also well to encourage the patient to stand with his eyes closed, and this static ataxia may be modified by making the patient stand with his feet approximated with his eyes shut; the hand of the operator may be placed on one shoulder of the patient, thus supporting him, but it should be gradually removed so that, if possible, he may be made to preserve the erect posture without assistance. Sometimes this does a great deal of good and favors the development of that kind of courage and self-reliance, the loss of which causes so much demoralization when the patient is suddenly startled or he attempts to cross a crowded street.

As a rule, the persistent employment of regular exercise which teaches the patient to train his power of balancing and the direct corrective use of vision and touch, as well as precision in consuming particular acts, do much good, although the fact must be borne in mind that the real purpose is not to accomplish the effects of ordinary gymnastic exercise or violent massage. Of all diseases of the spinal cord none is more influenced than this by the evil effects of fatigue, so that indiscriminate calisthenics or immoderate walking are extremely pernicious and retard or actually thwart all our best-directed efforts. As a rule, it is best to advise long periods of rest and suggest moderate superficial massage, only sufficient to keep up the local tonus of the muscles or to facilitate the emptying of the capillary vessels.

Systematic exercise should not be used in cases in which there is much pain or in which there are gastric crises, or where there is reason to believe that the bones are friable.

In many cases the ataxia proceeds directly from the plantar anesthesia, which is usually most pronounced on the peroneal aspect of the foot.

Many suggestions have been made as to how this should be treated. Strange to say, it is not always profound nor is it of necessity persistent, although the rule is that it is a permanent sensory disturbance. Mere rubbing or faradization with a wire brush is rarely effective, and it is surprising sometimes how much the walk will improve if the high-frequency current be applied directly to the soles by means of a spark electrode. I have no faith in the use of electricity in any of its forms in any other way, although I have used them all. In hysterical cases in which there is a great suggestibility, of course this as well as any measures that appeal to the imagination will do temporary good.

In about 60 per cent. of cases of tabes there is more or less involvement of the bladder, which varies from mere dysuria due to atony, to paresis and dribbling, and actual cystitis produced by the accumulation of residuary urine is common. It is strange how much mischief such a condition with its attendant toxemia may produce. For some reason which we do not understand, the tabetic patient is especially subject to the influence of toxins and septic poisoning, while intestinal troubles as well as cystitis are responsible for a decided aggravation of his disorder and profound exhaustion, and a continued condition of this kind was at a previous time often mistaken for secondary tuberculosis.

About six years ago a patient came to me from a Western city. He was almost helpless and his ataxia was so pronounced that he had to be helped from his carriage and almost carried into my office. Beside the familiar disappearance of the deep reflexes he was exceedingly emaciated and feeble, and suffered from gastric crises with diarrhea and had the classic pains and ocular symptoms and a great deal of vesical disturbance.

His home physician had inserted metal sounds insulated to their tips, and applied galvanic current to the interior of the bladder, but no attempt had been made to wash this viscus, although it contained at all times much offensive urine. Two days after his arrival in New York he took to his bed, having rigors and high temperature and other evidences of infection. His temperature ranged from 101 to 105, and for several days it was between 103 and the latter figure.

His condition became so alarming that his friends were sent for. Ordinary lavage of the bladder promptly removed the difficulty. The patient's temperature subsided, and in a week or so he was permitted to leave his bed. Then the use of systematic daily washing and catheterization and the internal administration of hexamethylenamin and atropin effected a remarkable change. Under proper regimen and supportive treatment the patient soon became able to walk, discarding the help of other people and his cane; got in and out of his automobile, and now has very little ataxia or other symptoms, and actually plays golf.

While the patient's reflexes are still absent, his affection seems to be at a standstill, and he is much encouraged. In these cases, which are numerous, it is of im-

portance to wash out the bladder at regular intervals for a long time, and this may be done with a normal salt solution or a borax solution, while hexamethylenamin may be given well diluted in ten-grain doses, and especially when it becomes necessary to discontinue the lavage for a few days.

In this connection I may say that I never have seen a case of tabes in which there were any urethral lesions.

As a claim has recently been made that the determining cause of tabes is a lesion of the urethra, I wrote to Dr. James Pedersen, one of the most skilful genito-urinary surgeons and urethroscopists, who replies: "I am willing to say that I do not recollect having treated with benefit to the general condition any true case of locomotor ataxia. I can, however, say that cases with symptoms of spinal and cerebral neurasthenia, having at the same time genitourinary lesions, have, of course, been benefited by local treatment."

These patients require a warm winter climate and at all times one that is preferably dry. San Antonio is an excellent place, and Lower California is also suggested, provided that high altitudes are not sought or do not increase the patient's distress. There are various places in Colorado well adapted for the sojourn of tabetics.

It must not be forgotten that a considerable number of patients, specially in cases due to shock, trauma or hysteria, in which there is no syphilitic basis, may be cured in a comparatively short time and by very simple measures. I have elsewhere recorded a very interesting case of this kind, and since its publication I have had equal success with others.[1]

25 Madison Ave.

CURATIVE EFFECT OF REST IN CHILDREN WITH PERSISTENT LOSS OF APPETITE.*

IRVING M. SNOW, M.D.
Clinical Professor of Diseases of Children, University of Buffalo.
BUFFALO.

There is occasionally seen in children a group of symptoms which are benefited by rest, and by no other treatment.

The little patient, from 2 to 10 years old, is brought to the physician with a general complaint that he has been in poor condition for several months, or that for a long time he has been alternately up and down, going to school for a few weeks and then collapsing into a curious state of physical prostration. There is usually no history of antecedent illness or predisposing cause. The parents will state that the child has a most uncertain appetite, and, in fact, at times will eat so little that it is a wonder that he can exist. Often the patient will refuse several meals in succession and will habitually reject the most important articles of diet—meat, eggs, vegetables. Often the boy or girl is subject to the most correct regimen; the meals are nicely prepared, most appetizing in variety and flavor, appealing to any normal childish palate, but the child remains absolutely indifferent to his food, taking the most minute quantities after prolonged urging. As a consequence of this voluntary semi-starvation, the chronic lack of appetite is associated with excessive muscular weakness and certain nervous symptoms. The child shows a singular unrest, is unable to keep still, but tires under the least exertion. He can not run or walk any distance without fatigue.

A boy of this type will show no physical courage. All normal boys are combative, a little inclined to play the bully, eager to show their strength and skill. Pluck is a valuable asset for a boy. It is well for him to fight occasionally for his rights; it increases his self-respect and prevents much of that hateful nagging which is universal in school life.

The boy's parents and friends are secretly ashamed of his lack of nerve. A girl shows equally her feebleness by her languid movements and has to be urged to take exercise. For several months there may have been a steady loss of strength or recurring periods of prostration.

If under 5 years of age, the child may behave differently. Part of the time he is running about, fussing with his toys; in active motion for a few minutes, then lying down or wanting to be held. He is either in incessant motion or limp with fatigue. There is no rest for the child's attendant. He is capricious and ill-tempered; will not eat, play or sleep at the right time.

In temperament, such children may be of an attractive type, animated and graceful in manner, charming in expression and talk, but nervous and precocious. More often they are irritable, emotional, highly neurotic; at school they learn with difficulty, have small powers of concentration, are easily confused, and are much worried over the more rapid advance of their comrades. They are poor sleepers; if very young, will not take a noon nap; if older, do not fall asleep early in the evening—toss about in bed, awake, languid, unrefreshed.

There may be the history of an imperfect convalescence from an infectious disease, or a steady deterioration in physique without adequate apparent cause. Sometimes the parents will say that the child has had persistent treatment in the way of tonics, country or sea air, well-regulated gymnastics, with temporary benefit or utter failure, the child coming home a complete wreck from a long vacation. He has perhaps grown rapidly in height without any increase in weight, which is stationary or even diminished.

SYMPTOM-COMPLEX.

The patient should be carefully examined and every detail of his life considered. In the etiology of the malady, heredity generally plays a minor rôle. The parents are as likely to be of vigorous physique as of delicate, neurotic constitution. All local or constitutional diseases should be searched for as a cause for the patient's continued ill health. He or she will be found to be under weight with slender limbs and poorly developed muscles; pale and rather withered in appearance. The tongue will be clean, with no serious disturbance of digestion, no secretory or motor gastric lesion. There is a general constipation from inanition. The pulse may be rapid, irregular or often normal.

Particular attention should be given to the condition of the heart. The cardiac symptoms will often be interpreted by the personal equation of the physician's mind. A considerable cardiac dilatation may exist. The heart sounds may be normal or so-called functional murmurs heard at the apex or pulmonic areas. As a rule, the heart is in good condition and all organs and functions are in order.

1. Railway and Other Injuries, etc., p. 209 et seq. New York, 1904, William Wood & Co.

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

Thus the positive symptoms in our symptom-complex are:

1. *Chronic Loss of Appetite.*—Patient under weight; indifferent to food.

2. *Extreme Weakness.*—Inability to run, walk or play; patient collapsed with fatigue at frequent intervals during the day.

3. *Nervous Disturbances.*—Deficient, restless sleep; lack of concentration at study. Some cases emotional and irritable; others apathetic. Child very fidgety in manner, illustrating the pathological law that deficient capacity for functional activity is associated with undue readiness for slight actions.

The condition under discussion is to be clearly distinguished from anorexia nervosa, first described by Sir William Gull, and recently ably reviewed by Forcheimer in an article, "Anorexia Nervosa in Children."

Playfair states that true anorexia nervosa is a very rare neurosis, a psychosis characterized by an aversion, an excessive disgust for food, indicating profound alteration in the nervous system.

Anorexia nervosa is a type of hysteria causing a rapid loss in weight without organic lesions. It is accompanied by delusions and by marked hysterical manifestations. The patient shows a strange unrest and tendency to overfatigue from constant walking, which leads to the exhaustion so easily produced in the starved body. The essential point, when dealing with anorexia nervosa, is to remove the patient from his domestic surroundings and to associate isolation with rest, massage and overfeeding. All authors agree that without isolation the treatment will certainly fail.

This article deals with a persistent loss of appetite or indifference to food, from nervous or muscular exhaustion, with no cerebral disturbance. The patient may be emotional, petulant, naughty, but there are no delusions, no hysteria. In both conditions there is a constant unrest and tendency to walk to the point of exhaustion, resulting in prostration and rapid emaciation.

The physician is apt to concentrate his attention on the anemia or cardiac dilatation, or to regard the child's nervousness and lack of appetite as the malady itself and not due to the underlying cause, a deficient power of muscle and nerve to sustain any prolonged effort.

Slight temporary cardiac dilatation is common enough in children and may produce weakness and anorexia, but the symptom-complex under discussion may also coexist with a heart of normal sounds and size.

The influence of school life in depressing the health of children is very much overrated. Sometimes the hygienic influences at home are at fault; generally the patient is not fit to go to school at all; any exertion, physical or mental, produces a deterioration in physique.

The patient's ill health is often perpetuated by the false idea that exercise and out-of-door life are beneficial. It will be found that whatever the child does is too much for his strength. Often the patient's extreme nervousness stimulates him to be in constant motion, to run about and play for a few minutes, and stop from exhaustion, a state analogous to the nervous gestures and lack of repose of a neurotic man or woman. Gymnastics increase the trouble; the most skilfully administered tonics—iron, arsenic, strychnin, etc.—produce no permanent improvement.

The case being thoroughly reviewed, and definite organic lesions being excluded, it will be evident that the underlying cause of the chronic exhaustion and anorexia is either a congenital lack of vigor, or is the result of faulty environment and habits and mode of living.

Such conditions occur in all stations of life, but are most frequent in children of a nervous type, whose interest in life is most intense, who may dominate the family by their strong will and persistent selfishness.

If the semi-invalidism and anorexia are merely due to too much milk, too monotonous a diet, to an imperfect convalescence with an insufficient period of rest and treatment, or too vigorous athletics, a change of regimen will insure a rapid and permanent restoration to health. But there are some children who early show an inherent weakness of constitution, a nervous excitability which may be a formidable handicap to their future career. Both in childhood and in maturity, after an unusual strain, they sink into a state of physical and intellectual prostration. If the constitution is correctly understood, they are quickly restored again.

TREATMENT.

I have adopted a plan of treatment in this chronic anorexia and prostration which may not be original, possibly is centuries old, but which is certainly effective, though strangely neglected. The idea is to give the patient a more or less prolonged period of inactivity, to allow him to rest until his reserve forces are accumulated. The inherent vigor of the patient is given opportunity to recruit. The parents are told that the cause of the child's ill health, poor appetite, insufficient sleep, ill temper, lack of muscular endurance, is chronic exhaustion, and that the boy or girl will probably improve if kept in bed two or three weeks and then given a short day of perfect freedom.

This advice will at first seem heroic; the mother demurs at the incessant care and attention which the child, if young and self-willed, will require. A good nurse is a valuable adjunct, always assuming her to be of a good temper, agreeable disposition and able to control and divert the little invalid.

The directions are that the boy or girl be put to bed and kept there for two weeks. In winter the patient, well wrapped up, may be given an airing with the windows open. In the summer the child may be put in a hammock or may lie on a lounge out of doors. A younger child may be placed in a perambulator, but no driving or automobiling, which excite and tire the patient and may offset the good of the enforced confinement, is permitted. The body should be sponged off and well rubbed, morning and evening, as a matter of toilet, and also to relieve the restlessness. A suitable, nutritious diet, well cooked, varied and attractive, with no especial restrictions should be served.

The child's attendant may amuse him with games and toys or read diverting stories, but may never scold or irritate it. Tonics may, of course, be given, but they are accessory, not essential elements of treatment.

EFFECTS OF THE REST.

The youngster will at first rebel at the irksome restraint and interference with his wishes and will cry and fret to get up. In three or four days the patient will grow more tranquil, realizing that his will is not the law of the household, and will commonly make less trouble in bed than when he was fussing about the house. He is no longer incited to study, to play or to compete with other children. In the absence of fatigue and nervous strain the child turns to eating and sleeping. After a few days in bed, the effects of rest will be evident in the appetite. The child will show a keen and critical interest in his meals, consuming enormous por-

tions. The food is perfectly digested. As the constipation in the case is due to underfeeding and lack of muscular tone, no laxative is now necessary. Sleep will come quickly in the evening—quiet, continuous, refreshing slumber.

The fine appetite of convalescence from an acute disease is due partly to the cry of the tissues for nourishment to restore the wasted cells, but also to the maintenance of muscular inactivity. The nervous secretory mechanism of digestion is not inhibited by fatigue or exercise past the power of endurance.

Less food is required in conditions of rest than of activity, but it is a clinical fact that the way to make a tired, growing child or an overworked, neurotic adult eat is to make him take rest. There is less difficulty in fattening an emaciated patient in bed than when he is up and about. Sleep intensifies the value of rest, insuring more absolute relaxation. The exact length of the stay in bed depends naturally on the previous condition and the response to treatment.

Rest should be continued until there has been a considerable gain in weight, a good appetite and natural sleep for ten or twelve days. There will now be a return of muscular vigor with a repose of manner as contrasted in the jerky, twitchy actions before commencing treatment.

An average period for the treatment of complete inactivity would be about two weeks. The nutrition, strength and appetite being satisfactory, the child may be dressed and given an hour's perfect freedom, out of doors if preferred. Improvement continuing, the period of activity may be progressively increased one hour more daily every three or four days until the child has six hours' perfect freedom in the middle of the day, out of doors for a part of the time. If the child be still delicate, or if the health be not quite at a normal standard, the short day should be continued for several months.

At this phase in the treatment, nutrition is much stimulated by a change of air, country or seashore, the patient being properly restricted in violent athletics and trials of strength. It will now be found that the powers of endurance of both muscular and nervous system are permanently augmented, that there is natural sleep, a steady increase in weight and a ravenous appetite with perfect digestion.

Most noticeable is the change in the disposition and character of the patient; the physical effect of the discipline and long tranquility result in the disappearance of the child's petulance and disobedience.

The boy or girl will develop good powers of mental concentration in study and conversation. The child will have spirit enough to play or walk or run for the relatively short time for which freedom is allowed. When the case is again medically reviewed, the cardiac dilation will have disappeared, the anemia will have been cured.

After a period of from two to four months, restraint is no longer necessary; the child may live its normal life. A recurrence of the anorexia is unlikely. The child will have grown in height and weight, is practically presented with an improved constitution. Some children have a large capital of strength, then others can bear only a few hours of activity, a minimum of mental strain. Their capacity should be estimated by their parents and physician, and their habits and career arranged accordingly.

It will at once occur to the reader that not all children with poor appetites require weeks of rest in bed. True; there are numerous borderline conditions in which two or three days of inactivity or a midday rest will suffice; but in these cases the languor or nervousness and anorexia are of short duration. If the symptoms have lasted for several months, the short or partial rest-cure is a waste of time; the invalidism will presently recur. To obtain a good result the full details of the treatment just described will have to be carried out.

If these patients are untreated, what becomes of them? The final result is apt to be a chronic delicacy of constitution, a lack of endurance, a fragile physique which will tell in after life. Still, adolescence brings new strength and varied interests and the majority of children struggle into a fair constitution in adult life.

ILLUSTRATIVE CASE.

Patient.—Girl, aged 5, only child. Complaint, lack of appetite and progressive emaciation.

History.—The patient has eaten almost nothing for two weeks; is absolutely indifferent to her food. She was born after a normal labor; was nursed three months; was afterward fed on cow's milk. She had occasional attacks of indigestion (vomiting), lasting a day or two, but had had no infectious diseases. During July she played with a cousin three years older. The incessant activity necessary to keep up with a stronger child produced the final collapse.

Examination.—Child of an active, nervous temperament; was always in motion; had no noon-day rest; was constipated; was a withered-looking child; weight, 28 pounds. Average weight at 5 years, 39 pounds; had lost 7 pounds in one year. Physical examination was negative.

Treatment.—The little girl was put to bed for one week. The second week she was allowed to lie in a cot out of doors. She proved most amiable and amenable to treatment. After the second day in bed she began to eat ordinary diet. In the first week she gained 3 pounds; in the second week, 1 pound. She was then taken into the country and given from one to two hours a day perfect freedom on her feet. Four months later I saw her again. She was plump and rosy, with a good appetite and regular stools. She now has from five to six hours daily of freedom to run and play. Her present weight is 34¾ pounds, a gain of 6¾ pounds in four months.

476 Hamilton Street.

ABSTRACT OF DISCUSSION.

DR. ARTHUR W. FAIRBANKS, Boston: I have been preaching of the advantages of rest in the diseases of childhood for a number of years; and at Atlantic City a year ago I put forth one more plea for its more general employment. I believe that nervous energy, the nervous impulse to expenditure of muscular exertion in excessive amount by children is out of all proportion to their ability to respond without damage to the organism. He who will use his eyes will find confirmation of this fact on every side. I believe that the chief deleterious effect of this extravagant expenditure of muscular energy is felt by the heart, as part of the muscular system, but by far the most important part. I was interested to hear Dr. Snow say that dilatation of the heart is an occasional feature of these cases. He says that such children are unable to run, walk or play. That was exactly the condition in a series of cases that I studied. I have termed these subjective and objective disturbances in heart function, an "essential insufficiency of the heart," which, in its effects, is of infinitely more serious consequence than insufficiency of the muscles elsewhere. In my paper last year, of which this was the title, I described cases identical with those mentioned by Dr. Snow, cases I have observed during eight or ten years. If one will question these children he will find subjective complaint suggestive of insufficient heart as well as objective evidence of the same. I have always maintained that the diseases and accidents of childhood, when they do not result in permanent ill effects, are really often blessings in disguise, for they enable the child to

get the rest that he would not otherwise receive. Many times parents will say, after a child has had an attack of measles, or some other slight illness, that the child is better than it ever was before. I do not think that the period of rest advocated by Dr. Snow is long enough. With a two weeks' rest, it would be only a question of time when the symptoms would recur, if in fact all of them disappear in so short a time. I also advocate the use of massage and warm saline baths. Later I use exercises, such as are employed in cardiac diseases. This entails careful nursing, but it is perfectly feasible to carry this out in any case at home, and all the results Dr. Snow has mentioned will follow if the case is treated in that way. The mistake is too often made by the family physician of not paying sufficient attention to conditions that do not present a picture described in his text-books.

DR. SAMUEL J. WALKER, Chicago: Dr. Snow has outlined much of the course of treatmeat I carry out in many of my own cases. I think that we can not emphasize too much the value of rest in the chronic loss of weight and of appetite and in all of the conditions below par. Dr. Kerley read a paper on malnutrition at Atlantic City that also made a marked impression on me, as it advocated the extreme value of rest in these cases not only in chronic loss of appetite but in all cases in which the child is below par. Where you suspect tuberculosis and can not get anything positive in the way of physical signs, what do you do? If the child is petulant, irritable, has a little rise of temperature in the afternoon, is losing in weight perhaps, what is the treatment? Rest, fresh air, hygiene, etc., all that Dr. Snow has brought out. Or take another class of cases. In many cases, weeks before the development of the typical choreic condition, there is this irritability, restlessness, and so forth, that precedes the development of the condition. Under such a method of rest as Dr. Snow has described the child's condition could be so improved that chorea would not develop.

DR. CHARLES DOUGLAS, Detroit: The cases reported here to-day give the impression that we should apply this method in a great many conditions other than the ones immediately presented to us. There is no doubt of the beneficial effects of this form of treatment. If we would look further into the physiologic processes going on we should be able to apply this method in other conditions as well as those mentioned. There can be no doubt that these children are overtaxing their strength just as a nursing mother often does when laboring too much. Enforced rest allows the nutrition to be appropriated, thus strengthening the digestive glands. The child is thus enabled to digest a larger amount of food and we see the benefit in a general improvement.

DR. T. D. PARKE, Birmingham, Ala.: Within the last few months I have seen proof of Dr. Snow's theory in a child showing the condition spoken of. The child had been spoiled and was under a nurse, who had absolutely no control over it. I insisted on the employment of a trained nurse. The child was kept in bed two or three weeks with all the windows open. Its appetite soon returned, as no effort was made to coax it, and after that there was steady improvement in weight and general condition. Anyone who attended the scientific exhibit at Atlantic City and saw a demonstration there, will never again question the desirability of keeping the muscle of the heart in good condition. The experimenter had a reservoir of water connected with a tube that communicated with the left ventricle through the aortic orifice. As the reservoir was raised, the water flowing into the ventricle under pressure, mechanically closed the mitral valve. When the reservoir was lowered the resiliency of the heart wall forced out the excess of water into the tube and the valve opened, thus giving a beautiful illustration of diastole and systole. The same experiment can be repeated through the pulmonary orifice for the right ventricle. These children are apt to have weak muscles generally. Wherever we find the muscle generally weak we must expect the heart muscle to be weak; and when the musculature of the heart becomes weak and too much strain is put on it, dilatation is apt to result. We should bear this in mind whenever a child has undergone a prolonged exhausting illness.

DR. C. G. KERLEY, New York: One year ago, as Dr. Walker remarked, I read a paper along similar lines and advocated a modified rest-cure. I still think that that is far better than the scheme advanced by Dr. Snow. I fail to see why a child who has simply a loss of appetite should be kept in bed. I get better results, I am sure, by having the child take his breakfast in bed. He is allowed to get up at 10 o'clock and remain until 12 o'clock. Then he has dinner and rests until 2 or 2:30 p. m. He is then allowed to be up for two or three hours in the afternoon. I believe that Dr. Snow would get better results by giving the child a change of air and a change of scene than he does by keeping the patient constantly in bed without any variety in his life. The whole matter is simply a question of the conservation of vitality. Most children overdo physically, particularly when playing with other children. They overdraw on their bank account of vitality and the result is a loss of appetite and all the other changes that go with an excessive expenditure of energy.

DR. C. RUTHERFORD, Chicago: I desire to call attention to the value of prolonged rest and enforced feeding in incipient tuberculosis. Last year in a case of tuberculosis of the hip-joint, by rest and forced feeding most excellent results were obtained.

DR. IRVING M. SNOW, Buffalo: I agree with Dr. Fairbanks especially that the period of rest should be prolonged in cases of dilatation of heart. But in the paper I presented to-day I was not speaking of that. It is a fact, too, that what one considers a dilatation of the heart is dependent somewhat on the physician's idea of where the apex should be. Dr. Fairbanks thinks that the period of rest is too short; Dr. Kerley thinks that it is too long; but I have found that by keeping children entirely at rest for two weeks we can keep up the progressive gain in weight. I do not think that the time of rest in bed mentioned by Dr. Kerley is enough. I think the child should be kept in bed a fair number of days. The child is simply left alone; in this paper I do not advocate forced feeding.

HYPERPYREXIA IN CHILDREN.

ITS CAUSE AND TREATMENT.*

PHILIP MARVEL, M.D.

ATLANTIC CITY, N. J.

Pyrexia is one of the most complex of all symptoms of disease and one of the symptoms most constantly present in pathogenic disturbances of metabolism. It is rarely absent in acute infections or in severe trauma, and more frequently characterizes the nature of the disease and the severity of the trauma than any other symptom, except the rashes peculiar to certain contagious diseases.

Despite the many difficulties and indeterminable problems met in the study of the various causes of fever and the complexity of its maintenance, a large number of investigators have assiduously pursued series of researches, with the result that, as yet, science is without an altogether satisfactory solution of the subject. In the light of our present view of the fundamental causes of fever, so far as they are known, a brief retrospect of the past half century would seem both permissible and interesting from the standpoint of contrasting the theories and hypotheses of the past with the more recent discoveries of micro-organisms, their influence on metabolism and as primary causes of disease, particularly if we are now to consider pyrexia, in infectious diseases, as "a response, in the metabolism, to the invasion of micro-organisms, and toxic disturbances of the nervous regulation of temperature."

As far back as the middle of the nineteenth century the subject of pyrexia was one of great interest to those

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

who had caught something of the inspiration of Johannes Müller's teachings, among whom there was none more earnest and capable than the beloved and venerated Virchow, who, having given a great amount of thought and much personal attention to the detailed investigation of the subject, was greatly interested in the hypothesis which described fever to be a "reflex process," in which the phenomena were responses to stimulation of the spinal cord by means of the "organic nerves."

Contemporaneous with Virchow, but holding an altogether different view of the subject, were Weber and Schiff; the former, having recently discovered the inhibitory nerve of the heart, suggested that the central nervous system governed the circulation through two antagonistic forces influencing the heart, the one exciting, the other quieting, the cardiac action; and the latter, claiming to have discovered the "vasomotor system of special nerves," supposed this system to control the tone and activity of the capillary vascular system.

Shortly after Schiff's declaration, Virchow, who had already caught something of the idea of "antagonistic circulatory" forces, that is, the idea that fever might be a neurosis, expressed himself accordingly in his Treatise on Pathology, published in 1853. He was the first to teach a broader and more comprehensive view of the cause of pyrexia, which he afterward showed was not a mere production of heat, overaction of the heart or disturbed tension of the vascular system, but an actual failure of proper nervous control, and a disturbance, rather than an overproduction of the normal forces.

However, contributory science was too immature and imperfectly worked out, at that time, to furnish proof of how control was exercised. It, therefore, remained for Virchow to suggest a system of "moderating centers," which could influence not only the heart and blood vessels, but also the great complex organization of forces which is now designated metabolism. He believed fever to be a condition resulting from the state in which the nerves had, for some indefinable reason, lost their control over the "organic processes," which assumption was probably the first intimation of the part which metabolism is believed to play in the rôle of pyrexia.

In 1855 Traube discovered that in pyrexia the elements of nitrogen were increased, and this gave rise to the declaration that, if fever be a neurosis, then there must be a system of "trophic nerves," by which the chemical processes of the organisms were controlled; otherwise, the disturbances of the nervous system could not include tissue degeneration. Therefore he, as well as Virchow, held that there must be a "fever-producing agent," but differing, not with respect to its action on the inhibitory but on the vasomotor nerves, resulting in a contraction of the peripheral vessels, occasioning a diminution in their volume of blood, and, in consequence, the quantity of heat in the surface of the body, coincident with the rise of internal temperature. The increase in the difference between the degree of "normal external and normal internal temperatures, he considered to be fever, and its decline or defervescence due to nothing more or less than a cessation of the vasomotor spasm."

However, the explanation was short-lived and accepted only by a comparatively small number, and by them but a short time, for Liebermeister had already begun his investigations of the subject with the aid of the calorimeter, the outcome of which was to demonstrate that when the surface loss of temperature was entirely annulled, by raising the external temperature of the body to a point where no heat was parted with, the increase of internal temperature was nothing like so rapid or high as in the initial stage of many febrile states; therefore he formulated the well-known theory which bears his name, viz., "that in fever, as in health, constancy of temperature is insured by the adaptation of production to discharge and not of discharge to production," and, secondly, that "in fever bodily temperature is recorded in the same way as in health, with this difference, that the "norma" has become several degrees higher."

This theory was considered far from satisfactory by many, and not without serious objections, because, first, experiments and clinical observation failed to prove the statement that arrest of surface rise of temperature was adequate to produce pyrexia; and, second, the declaration that febrile temperatures tend to reach their "norma" at several degrees higher than normal, was open to critical difference of opinion.

About this time, Senator, one of the most thorough and capable investigators of his day, impressed by the variance of the theories which had preceded his conclusions on the subject, took up the study and arrived at results differing somewhat from those of Traube and Liebermeister, who differed slightly in their beliefs from Virchow, particularly with respect to pyrexia being a disturbance of the nervous system by which the constancy of the bodily temperature was maintained. It remained for Senator to present a still broader, if not a wholly different view of the subject, in which he recognized both the vascular and thermal disturbances and also the metabolic phenomena. Hence, for the first time, special changes in the metabolism were made a fundamental cause of pyrexia.

Simultaneous with Senator's investigations[1] were those of Leyden, whose conclusions differed from Senator's more with respect to the fact that the latter claimed to have found no marked increase of respiratory discharge of water or carbon dioxid in animals and, therefore, concluded that the only essential metabolic change in pyrexia related to increased degenerative changes in proteids, but the former, having extended his investigations to the study of the subject in man as well as in animals, and having estimated the loss of heat in limited portions of the body by the aid of a cylindrical calorimeter, calculated the relative loss from the special surfaces exposed with that from the whole surface of the body and inferred that, in fever, even where there is no visible perspiration, thermolysis might be even 40 per cent. greater than in health, and, contrary to the findings of Leyden, noted a corresponding increase in the respiratory discharge of both water and carbon dioxid, which he attributed to increased nervous activity and coincident respiratory movements.

Pflüger, a distinguished physiologist of his day also became actively interested in the study of this subject, directing his experiments more especially to determining the intake of oxygen and the output of carbon dioxid in both normal and fevered animals, with results that inclined him more particularly to the view of Liebermeister, viz., that "normal regulation consists in the adaptation of production to discharge," and that increased production is the essential element of fever.

This announcement, with further investigations by Senator, caused a modification of his former hypothesis,

1. Researches on the Processes of Fever, 1873.

which he subsequently stated as follows: "There is no absolute nor arbitrary interdependence of the disorder of nutrition and the pyrexia which follows; the only fixed causal relation being that which exists between the pyrexia and the coincident disorder of the cutaneous circulation."

Even this simple and apparently comprehensive explanation of the cause of fever was not permitted to go unquestioned for any length of time, for shortly thereafter Cohnheim, after a critical review of the subject,[2] gives decided preference to the theory of a neurosis, and, in a carefully arranged summary, declares as follows: "The nervous system presides over the thermogenesis no less directly than over the thermolysis," thus favoring the view of increased heat production throughout the febrile processes, while he admits that the cutaneous circulation is restricted in the initial stage of fever when the rise of temperature is rapid, but does not accept the declaration that this is the cause of the rise. Moreover, he believes the remarkable feat of the diurnal range and variations in pyrexia, which are so much greater than in health, are due to thermogenesis rather than to special changes in the circulation.

To appreciate properly the deductions resulting from the earlier investigations, it must be kept well in mind that up to this date, a little more than a quarter of a century ago, little or nothing was known of the cause of either periodic or bacterial fevers; hence there could be no reason at that time for attributing any direct relation between the circulatory activity, the presence of micro-organisms and the height of the fever succeeding their invasion. To Koch, Pasteur, Metchnikoff, Behring, Pfeiffer, Roux, Ehrlich and many other pathologists and bacteriologists humanity owes a debt never to be discharged, for their remarkable discoveries in the bacterial world and for the knowledge obtained of specific toxins and toxic substances.

It is true one can scarce conceive of either pyrexia or hyperpyrexia without giving great consideration to the master tissue of the body, viz., the central nervous system, and its far-reaching influence on the intercellular forces and major systems of circulating fluids, for under certain protected conditions microorganisms have little or no effect on the organized forces of the body; hence no hypothesis admitting an explanation of the causes of pyrexia or hyperpyrexia could be declared or even considered, that omitted a proper consideration of the relations existing between the central and peripheral nervous and circulatory systems, disturbance of these being the chief adjunct causes of fever. Indeed, any definition of fever which omitted reference to the associated influences of either increased or diminished activity or partial paresis of the central and peripheral nervous systems or of the circulating fluids of the general economy, would be most incomplete for the reason that extremely high temperatures in the febrile states are as often observed in traumatic injuries and in severe and prolonged exposure to both artificial and natural heat and also to the external action of cauterizing chemicals and internal ingestion of drugs as in acute pathogenic diseases.

Certainly, when clinically studied, one finds the average pyrexia so closely resembling the symptomatology and laboratory findings observed in the few infections in which the micro-organisms have been isolated, that we may safely assume that, in the majority, and I feel like saying in all, of the cases of infection, the micro-organism is the primary cause of the pyrexia, and where hyperpyrexia is associated therewith, the causes are the same, with the addition of some yet unknown interference with heat production and its deflection and that, through the circulatory and nervous systems, secondary causes are made more operative.

In the cases of extremely high temperature following the ingestion of poisonous drugs, of sera, of chemical irritants or exposure to intense artificial or natural heat, it would seem proper to classify these cases not as pyrexias or hyperpyrexias, but as high temperatures arising from varied causes which are even less well understood than those occasioned by micro-organisms, and might better be classed as hyperthermias.

In traumatic injuries, whether the injury be external or internal, direct or indirect, whether within the central nervous system or of some other tissues of the body, occasioning a structural lesion, the excitement causing the pyrexia would be, undoubtedly, primarily some external force.

For convenience of discussion I have divided the extreme temperatures into four classes, viz.: (a) Those due to micro-organisms and, occasionally, parasites; (b) those due to drug poisons and chemical cauterizations; (c) those due to traumatic injuries, and (d) those due to psychic and other neurotic disturbances. I appreciate the fact that in the foregoing division there may properly arise a question as to the propriety of such a classification, but since the same is made for the convenience of this discussion rather than with reference to scientific acumen, doubtless the above divisional arrangement will be privileged. For obvious reasons I deem it proper to confine the further discussion of this subject to class (a), in which the causes of pyrexia and hyperpyrexia are accredited to micro-organisms. That the variations in temperature are due to some substances pathologic, chemical, toxic or ptomainic—produced by the specific microbe characterizing the disease present—I assume will be accepted without further reference or special proof.

For convenience and a clearer understanding I shall consider the subject of infections further under two subdivisions, viz: (1) Those produced by endogenous and (2) those by exogenous causes.

By the term simple toxemia or ptomaine infection, I would characterize that condition following an overloading of the blood and lymphatic circulation with normal or abnormal food, or with tissue metabolism, as a toxemia arising from endogenous causes, and all cases of pyrexia arising from causes thus introduced into the circulations as endogenous diseases. All diseases which are sharply separated from those arising from food and tissue metabolisms and are of bacteriologic or pathologico-chemical origin, are more particularly known as contagious infections, which are truly toxic pyrexias, as arising from exogenous causes.

It is possible that the former may be bacterial in origin, but the micro-organisms involved are usually habitants of the intestinal tract and should be considered as differing and wholly apart from those present in acute toxic and contagious febrile states. The latter, in which bacterial wastes are elaborated from the activity of the organisms within the various tissues of the body, especially in the more important viscera, causing intense intoxication and poisoning of the system at times

2. General Pathology, ii.

sufficient to threaten and even destroy life, differ greatly from the former and should be so recognized.

Each of these infections produces its own specific product, the direct or immediate influence of which depends on the resistance within the system, by the presence and activity of the various so-called antibodies—anti-agglutinins, antitoxins, opsonins, etc. To what extent these primary or fundamental causes are vegetable, animal, pathologic and chemical I will not attempt to state, but the following inference would seem quite probable and even permissible, viz.: That the degree of the pyrexia is, in all probability, due to the intensity of the infection and the inability of the body to resist the invasion though the height of the temperature may be influenced, to some extent, by the heat environment to which the individual is exposed, as it has been noted in the records that a much larger number of cases of hyperprexia occur in the months of June to September, inclusive.[3]

Before disposing of the question of the causes of pyrexia and hyperpyrexia, the subject of the ductless glands and the relation of their secretions to functional and organic disease through disturbed metabolism would seem worthy of consideration. Though much has been written on the subject, particularly on the influence and activity of the perverted or abnormal secretions of these glands on the nervous system and the more important glandular organs by a number of French writers, and perhaps no less by one of our own countrymen, Dr. Sajous,[4] their place as a causative factor is far from proved. With our limited knowledge of their function and relation to the major forces of the economy, we can only regard them as secondary in their causal relation.

There is to-day, as in the past, with respect to this subject, some tendency to fix the responsibility of least well-understood happenings on least well-known causes. Simple abstract inductions, though obtained by well-defined methods pursued by carefully detailed investigations, rewarded by concrete findings in the study of many of the problems presented in the diseased and abnormal human forces, are not to be accepted as proved facts, and, until we know more of the *vis a tergo* in the circulation; of the life element and function of the protoplasmic cell; of the component forces and intercellular chemistry of the glandular secretions, and of the mutual exchange between the three great systems and their inimitable relations, will we know most of all that enters into the phenomenon we designate fever. Because the word is a convenient clinical term, it nevertheless represents a group of phenomena having a more or less definite sequence and origin which we can best express as a condition produced by pathogenic organisms or their products, operating within the body, disturbing the economic forces and raising the temperature "norma" to abnormal heights, or a more or less certain response in the metabolism to the invasion of micro-organisms or toxic disturbances of the normally regulated temperature.

In the following briefly tabulated cases of hyperpyrexia, which have been studied in my practice, I shall refer only to those which had, associated with high temperature, some special feature of interest other than the pyrexia. Age limit was from eight months to thirteen years.

I will speak first of the cases of enterocolitis, of which there were two, one acute, the other chronic with acute exacerbations; the first is of interest from the circumstances which surround the rise in the temperature:

CASE 1.—Bessie A., 17 months old, ill ten days, bottle-fed, cause of illness, milk infection. Previous to illness child was well nourished, quiet and easily cared for. The temperature had been ranging between 102 and 104 F.; the largest number of stools in previous twenty-four hours was fifteen, mucus, muco-purulent and slightly blood-stained.

Treatment consisted in the administration of calomel, castor-oil, bismuth and alkalies, assisted by colon irrigations; fed on dilute egg albumen and milk whey. Parents being non-residents, were anxious to return to their home and family physician. Child's temperature on leaving Atlantic City in the afternoon was 104.2; journey was made in an ordinary passenger coach, child remaining on a pillow, supported on nurse's lap; cold compresses were placed over forehead and upper part of the head and frequently renewed; time consumed in travel, four and one-half hours. Temperature on arriving in New York was 107.2.

Child was immediately immersed in a cold bath preceded by being wrapped in a blanket wet in warm water. "Tubs" were repeated at intervals of one, two and three hours until the temperature was reduced and remained between 102 and 104 F. The dorsum was also rubbed, in the interim, at frequent intervals, for three to five minutes, with pieces of ice held in a towel, protecting the child with hot water bags along the spine between the shoulders and at the feet; colonic lavage with cold water was also used. Because of the stasis in the extremities and the cyanotic state of the mucous membrane, the treatment used internally during the time of temperature reduction was nitrite of amyl inhalations and hypodermic injections of 10 minim doses of Hoffman's anodyne.

After vigorous treatment of between five and six hours, the temperature remained between 102 and 103 F. for the next few days, and subsequently returned to normal, with final restoration to complete health.

CASE 2.—Child, 3 years old, with a history of chronic enterocolitis, with frequent acute exacerbations; was much emaciated; skin pigmented, suggesting complicating disease, profoundly anemic. The blood findings negative, except for

TABLE OF CASES OF HYPERPYREXIA IN CHILDREN.

No.	Diseases.	Temperature.	Number of cases.	Per cent. Cured.	Mortality.	Per cent. of diseases.
1.	Acute articular rheumatism	106	1	100	0	0
2.	Bronchopneumonia	106-106.6	9	45	5	55
3.	Cerebrospinal meningitis	106-108.8	2	0	2	100
4.	Erysipelas	106-106.4	3	100	0	0
5.	Enterocolitis, acute and chronic	106-107.2	6	50	3	50
6.	Measles	106-106.8	4	100	0	0
7.	Intestinal worms (Ascaris Lumbricoides)	106-106.8	2	50	1	50
8.	Pyemia	106-107	2	0	2	100
9.	Septicemia	106-106.6	1	100	0	0
10.	Scarlet fever	107	1	0	1	100
11.	Tonsillitis, follicular; one postpharyngeal abscess	106-106.4	6	83	1	100
12.	Tuberculosis (meningeal)	106-110	5	0	5	100
13.	Tuberculosis (pulmonalis)	106-107.2	2	0	0	100
14.	Variola	106.2	1	100	0	0
			45	Av. 48.8	22	

3. Allbutt's System of Medicine, I, 821-851.
4. System of Internal Secretions, etc., I and II.

simple anemia; child died within twenty-four hours after I saw it. Unfortunately, autopsy was denied.

The temperature in this case was 106.6 F., and the pigmentation resembled somewhat that of Hodgkin's disease. It is not impossible that this may have been tuberculosis of the suprarenals.

Cases 3 and 4.—The next cases of special mention are two cases of measles, sisters, aged respectively 4 and 6 years, peculiar only in the fact that they had been healthy and well cared for; both were stricken at the same time and each had a temperature ranging between 106 and 106.4 F. on the afternoon of the second day; the rash did not appear until the afternoon of the third day, with the exception of a few slightly suspicious areas of erythematous rash, poorly defined, on the face and neck; Koplik's spots were present in the mouth, though few in number.

The temperature was reduced by cold baths, followed in each instance by being wrapped quickly in warm steaming blankets, which were followed in between five and six hours by a temperature ranging between 103 and 104 F., and subsequently by a natural convalescence and no sequels.

Case 5.—One of the cases of erysipelas is worthy of mention because of the age of the child, 8 months, and the rapidity with which the infection extended. First appearance of infection in the morning at 7 o'clock, on the lower third of the right leg; in two hours it had spread around the leg, forming a perfect zone one and one-half inches wide. This spread so rapidly both toward the foot and upper part of the body that in less than eleven hours the foot was completely involved and the extension upward had also reached the lower third of the femur. In thirty-six hours the whole leg, including the groin and the right side of the vulva, was involved. The temperature reached 106.2 on the evening of the second day, and again reached 105.8 on the morning of the third day; was reduced by wrapping the child in wet blankets wrung out of cold water and the injection of antistreptococcic serum, 500 units, on the afternoon of the first day; 1,000 units in the middle of the night of the first day; 1,000 units on the morning of the second day, and 500 units on the morning of the third day; this was supplemented with tincture of chlorid of iron, in small doses, of one and two drops, four times daily. Child recovered perfectly and is to-day in excellent health.

In the case of bronchopneumonia temperatures reach from 106 to 106.6. These cases exhibited their greatest interest in the fact that seven of them occurred in acute influenza, one in measles and one in whooping cough. High temperatures in bronchopneumonia accompanying influenza are not uncommon and are frequently above 105 F. In cases of whooping cough complicated by bronchopneumonia, hyperpyrexia is accompanied by a very high mortality.

Case 6.—Child, 3½ years old, and had whooping cough for three weeks, which was marked by rather severe paroxysms of coughing, hemorrhagic injections into the sclera and aggravated general bronchitis. The pneumonia developed at the end of the third week, following a rise of temperature which continued gradually until the third day of the pneumonic process, when it reached 106 F. The application of alternating cold and heat by means of wet blankets, protected, was resorted to with the result of reducing the temperature; the child died the following day.

Case 7.—Child, 13 years old, follicular tonsilitis, followed by a postpharyngeal abscess, in which the tonsillar involvement had been of rather indifferent and sluggish type, the temperature ranging between 101 and 102 F., returning to normal at the end of a period of nine days. Three days thereafter the temperature, preceded by a chill, suddenly rose to 105 F., falling to 103, and rose again the following morning to 106.2. Examination of the pharynx revealed a postpharyngeal abscess which was relieved and the patient recovered.

Case 8.—The case of scarlet fever was interesting from the fact that the rash was never fully developed and that the patient, a boy, 9 years old, was so toxic from the very first that he was never quite conscious six hours after the initial chill; he expired on the afternoon of the second day, with a temperature of 107 F. Little or no treatment was instituted here because the parents refused the application of hydrotherapy.

Case 9.—Perhaps no case in this list is of great interest than this. While all of us, possibly, have seen cases of hyperpyrexia occasioned by intestinal worms, but few of us, probably, have had the opportunity to see a case in which death followed, and in which the internal viscera were more or less infested by the parasites. In this case, A., a boy 9 years old, autopsy revealed a number of worms in the stomach, common and hepatic ducts; the temperature just previous to death reached 106.6.

Case 10.—This case had a temperature of 106.2, but by persistent purgation and the administration of santonin, etc., fifteen worms were discharged at different intervals, and the girl, 11 years old, recovered.

Speaking, briefly, of the general yet more or less special treatment of the average case of hyperpyrexia, one must have a definite conception of the patient's physical condition, natural resistance under normal conditions and temperamental control before selecting the form and frequency of the temperature reducing agent. Whilst hydrotherapy must form the principal safe means of temperature reduction, which should be modified in various ways to best meet the exigencies of the case, it will need to be supported by artificial heat and other forms of stimulating agents.

The primary exposure is of importance and should always be selected with reference to the physical and mental condition of the patient at the time of the treatment, so as to avoid too great a shock in its beginning. The methods may be selected to meet the patient's greatest comfort when the end to be accomplished is in no way affected by the means or methods employed.

The drugs to be employed should, at times, be supportive, at other times stimulating, and at still other times sedative; but at all times they must meet certain specific and definitely indicated requirements. Other agencies, such as artificial heat, oxygen, synapisms, etc., also have a place in the treatment of these cases and should be promptly applied when occasion requires.

The report of the study and observation of the cases of bronchopneumonia seen at the Infants' Asylum in the state of New York by Dr. Holt, in which hyperpyrexia was present in part of the cases, if studied from the relation of temperature to mortality, is not without added interest in this connection. It is declared that when the cases reached a temperature of 106 F. and more the mortality was 85.5 per cent.; between 105 and 106 F., 60 per cent.; between 104 and 105 F., 49 per cent.; between 102 and 104 F., 60 per cent.; and when the temperature never reached 102 F., the mortality was 71 per cent. These studies tend to prove that in bronchopneumonia high temperatures, under reasonable control, are protective rather than destructive, and though we have reason to believe that the normal resistance presented by this class of patients was far from being representative and of average comparison, nevertheless the mortality rate between 105 and 106 F. was not remarkably high, and between 104 and 105 F. was the lowest of the series. No doubt to-day, in the light of recent methods and advanced views on the subject, the mortality per cent. would be somewhat reduced.

Some of the facts set forth in the report are to the effect that in bronchopneumonia the highest and lowest extremes of temperature seen were the most dangerous, and a temperature between 104 and 105 F. was most protective.

For the purpose of further comparing the mortality rate of the cases reported by Dr. Holt, I merely call attention to a statistical report of 100 adult cases of hyperpyrexia treated at Guy's Hospital, London, by Dr. J. H. Bryant, in which the temperatures reached 106 F. and more, where the mortality rate was 84 per cent., and in the cases of bronchopneumonia it was 100 per cent. This would indicate that hyperpyrexia in adults with bronchopneumonia, considered from a small number of cases, is particularly fatal, more so than in children.

In my own cases the showing is quite a little better, due, no doubt, to the previous hygienic surroundings of the children and their out-door life and consequent robust resistance.

CONCLUSIONS.

The deductions to be drawn from the foregoing are:

1. That pyrexia is a complex phenomena occurring as a result of infection, injury, nervous shock or disturbance, the causal relations of which are as yet far from being wholly understood.

2. That hyperpyrexia is merely an aggravated pyrexia, and when present in certain diseases, such as bronchopneumonia, meningeal and pulmonary tuberculosis, pneumonitis or severe injuries to the nervous system is of grave significance.

3. That the rational use of cold water, properly sustained by artificial and internally stimulating agents, even in the extremely high temperatures, may, not infrequently, be followed by success.

4. That hyperpyrexia in children, though always signifying grave danger, is not so likely to be accompanied by fatal results, as in adults.

1616 Pacific Avenue.

ABSTRACT OF DISCUSSION.

DR. T. W. KILMER, New York: One point of especial importance is the application of cold packs. A favorite method of Dr. Kerley consists in the use of a bath towel with two holes cut in it for the arms. It is not wet when the child puts it on, so there is no fright. After being put on it is wet with water about 90 degrees, and later with water about 70 degrees. It is surprising to see how the temperature is lowered by the application of this cold pack. I know that one patient was kept in this pack for seventy-two hours, and I am sure that it was to this pack that the child owed its life.

PRESUMEDLY CURED GONORRHEA AND MARRIAGE.*

FERD. C. VALENTINE, M.D.
AND
TERRY M. TOWNSEND, M.D.
NEW YORK CITY.

Thirteen years ago it seemed timely to the senior writer hereof to sketch the dangers which apparently-cured gonorrheas[1] offer in the marriage-bed. It would be arrogant to tribute to that little effort anything more than the credit of being one of the early American papers on the subject. Other and better pens have since taken up the matter. The result is that to-day but few physicians will approve the marriage of a person who has had gonorrhea before all methods known to science to ascertain the presence of gonococci have proved negative.

Practitioners not especially trained in the study of genitourinary diseases are now asking specialists for the details of the all-important matter. It is in response to numerous demands for assistance that this paper is prepared. With a view to rendering the service as tersely as possible the magisterial tone is adopted and will therefore be pardoned.

THE HISTORY OF THE PATIENT.

A man who states that he observed the first symptoms of a gonorrhea within 48 hours after impure relations, is exposed to the suspicion of having then suffered a recrudescence of a preceding and perhaps forgotten infection or to have acquired the disease in a coitus within 8 or 10 days of the presumed cause. One in whom the first evidences of a specific urethritis appeared weeks or even months after coitus may have had a similar experience or may have failed to note the first manifestations of the disease. In the latter case it may have been a *blenorrhagie chronique d'emblée*, as Guiard calls what is ordinarily designated a "mild case." Parenthetically it may be observed that these so-called "mild attacks" often prove very rebellious. Discussion of the reasons for such rebelliousness is beyond the province of this paper.

Not infrequently an applicant for examination will tell that since the cessation of all symptoms of infection he has often had relations with women, among them several not given to sexual promiscuity. Indeed, his intimacies with one or another may have extended through prolonged periods, with the result that not one of them was infected by him. In explanation thereof several elements may enter, among which the most frequent only can here be mentioned. One woman contaminated with gonorrhea may have presented such slight manifestations of the disease that they passed unobserved, or she may have been perceptibly infected and have concealed her condition, to continue her hold on her lover; again, she may have had relations with another man, whom it might be more advantageous to accuse, and so on throughout the gamut of ignorance and cupidity. It would seem, however, fortunately for the human race, that a number of women, for a time at least, are immune to gonorrheal infection. No other explanation appears reasonable for the fact that some men, uncured of gonorrhea, marry without infecting their wives.

Let it be assumed, for present purposes, that the applicant for examination has had but one attack of gonorrhea. Let it be assumed, further, that for several years thereafter he observed no vestige of the disease. Nevertheless, it will be well then to subject him to tests which study and experience have methodized.

IRRITATION OF THE GENITOURINARY ORGANS.

With a view to obtaining all the evidence possible of what may occur in the course of nearly every man's life, the applicant is instructed to bring about as much irritation as he can by:

1. Eating freely of those things which he knows will disturb his digestion.

2. Drinking more champagne or beer than he usually consumes, but not to the extent of inebriation. If he is an abstainer or if the consumption of any quantity of alcohol easily leads him to inebriety, he is advised to consume very large amounts of carbonated beverages instead.

3. Inordinate physical and mental work, late hours,

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. American Medico Surgical Bulletin, Oct. 1, 1895.

dancing, bicycling and horseback riding will contribute to irritating the genitourinary organs and thus enhance the intensity of the irritation.

These tests should be carried to the extreme of the applicant's endurance. It will be well to extend them over a week or ten days. If perceptible disturbance, such as even a slight excess of urethral secretion, or even discomfort on urination, arises before the expiration of the period mentioned, it will be in order to proceed with the next step of the investigation.

URETHRAL SPECIMENS FOR MICROSCOPY.

The patient is ordered to present himself before voiding his first morning urine. If for any reason, such as the distance of his residence or the need of very early rising, prevent this, the patient is provided with sterilized, blunt tooth-picks and microscopic slides and instructed in the technic of taking any excess of urethral secretion that may present. He is also provided with six 3-oz. (90 c.c.) clean bottles with clean corks, and instructed to pass into them his first morning urine. He is further instructed to write his name or other distinguishing mark and the date on the labels of the bottles, and to number the succession in which each bottle is used.

When the patient can come to the office before having voided his first morning urine, the urethra is stripped according to the technic described elsewhere.[2] Should stripping fail to bring an excess of urethral secretion to the meatus, the urethra may be curetted with a sterilized platinum loop and the results finely spread on a flamed cover-glass for microscopic examination. At the same time that a specimen is obtained for microscopy one or more slants of Loeffler's serum are inoculated by stabs and streaks and put into the culture oven immediately. They are kept at 99 F. Some of our colleagues deem room temperature sufficient for the purpose.

The patient is then instructed to half fill a 12-inch (180 c.c.) ignition tube with his urine and entirely fill as many more tubes as he may need to almost empty his bladder. The remaining quantity is passed into a final tube. As the patient has used each tube it is immediately stoppered with sterile cotton and marked by means of a "glass pencil" with the patient's name and numbered to designate its place in the succession of tubes used. If the urines intervening between the first and the last are perfectly clear and contain no "floaters" and if the first and last suffice for exhaustive microscopy, the intervening tubes may be discarded. The saved first and last urines, even if microscopically clear and free from "floaters," should be sedimented and the result prepared for microscopic examination.

SPECIMENS FROM PROSTATE AND SEMINAL VESICLES.

If the preliminary preparation of the patient has not resulted in a recrudescence of the discharge, the prostate may be massaged and the seminal vesicles stripped for specimens[3] in addition to those taken from the urethra. The contents of the adnexa mentioned, as they present at the meatus, are used for microscopic specimens and culture. Should no secretion be immediately obtainable by massage and stripping, the patient is instructed to walk about for a few moments; usually a slight oozing at least then presents. If this does not occur, the urine passed within five or ten minutes thereafter will be found in most instances to be loaded with the secretion that has not escaped ("Expression Urine"—Posner). Specimens herefrom are then available for microscopy.

URETHROSCOPY.

If within three days autoreinfection of the urethra has resulted, the discharge must be taken for microscopy and culture. If no reinfection has occurred, exhaustive urethroscopy is demanded. Specimens for microscopy and culture are then taken from any enlarged crypts or follicles that may be discovered. The most convenient means for pumping the secretions from the adnexa is the Kollmann gland aspirator.

Even if all the specimens obtained and cultures made prove to be free from gonococci, the presence of the infectious microbe is not to be entirely excluded, as it is just possible that all these may have happened to contain none of the microbes. For additional safety all the proceedings described should be repeated two days after the urethroscopy.

ARTIFICIAL LOCAL IRRITATION.

Both sets of examinations proving negative, further steps are indicated. An anterior irrigation with mercury bichlorid, 1 to 5,000, generally suffices to set up quite a severe urethritis, which is easily controllable by a few irrigations when no gonococcal invasion of the urethral stroma has occurred. When, however, the provoked discharge contains gonococci, the question under consideration is decided. Some urethræ show a marked tolerance of the bichlorid of mercury; it then fails to cause a discharge. Usually an injection with silver nitrate (1 per cent.) retained for five minutes will serve the purpose where the mercuric bichlorid fails.

THE SEDIMENTED URINE.

When examination of all genital secretions or hypersecretions fail to show the presence of gonococci, the sediment of urine may show the presence of the infectious microbes. The site where they are held residual must then be determined by repetition of the researches already described.

QUESTIONABLE MEANS.

In some countries the examination is not deemed final until the applicant has several times performed the sexual act with condums and has brought these with their contents for microscopic and cultural examination. We who ever have an innate repugnance against counseling extramarital coitus, especially to a man about to marry, do not care to avail ourselves of this test. This test is unpopular with patients and frowned on by the profession in this country. Whether this is due to innate morality, to delicacy or to prudishness is not now under discussion. We have, however, rarely found it expedient to avail ourselves of this test. The exception is whenever we are convinced that the individual presenting himself for examination has no intention of observing continence even on account of the approaching marriage. Ours would be a false morality did we fail to avail ourselves of his known weakness by suggesting that, should he indulge, it would be advisable to use a condum in order that its contents may be subjected to microscopic and cultural examination.

The future will decide the value of opsonic methods in determining the presence of gonococci. The time is not yet ripe for its discussion in a mere sketch like this.

2. The Irrigation Treatment of Gonorrhea: Its Complications and Sequelæ. William Wood & Co., New York, pp. 202 et seq.

3. Massage of the Prostate and Stripping the Seminal Vesicles: Med. Rec., June 29, 1907.

All the tests proving negative, the series should be repeated a month or two later. If the second series of investigations expose no evidence of the presence of gonococci, it is fair to assume that, as far as present-day science can determine, the applicant may marry with safety to his future wife. Little beyond a mere inventory of the steps necessary to decide the all-important question has been offered. Even as such this paper has several specific objects:

OBJECTS OF THE PAPER.

1. The discussion, with which it may be honored, will bring forth the means employed by abler students to determine the momentous questions involved.

2. General practitioners, guided and advised by those who may by their comments give this paper value, will everywhere urge their ex-gonorrheics to be examined before contracting matrimony.

3. Marital communication of gonorrhea will consequently be much reduced and a vast amount of misery and death of innocent women eliminated from the trail of the disease.

4. The state will be spared the maintenance of an uncountable number of dependents.

5. Sanitary science will be advanced by its aid in combating the effects of a disease which can not come within the scope of sanitary enactments.

ABSTRACT OF DISCUSSION.

DR. J. M. BEFFEL, Milwaukee: I believe that the subject of this paper is the most momentous problem we have before us at this time. When we consider that fully 80 per cent. of the abdominal operations performed on women are due to gonorrhea contracted almost invariably innocently on the part of the women; that throughout this country almost 50 per cent. of the men between twenty and forty have had gonorrhea; that it is almost incurable, and that these men are constantly having this morning drop, and are not cured at all; when we look into the structure of the urethra, and realize that it is not a simple tube, but has folds and crypts in it, into which an antiseptic cannot reach at all; that it has twenty or more openings, and that the whole tract may be affected, from one end to the other, and that antiseptics can never reach those recesses, then it seems to me that this problem becomes one of the most important problems we have to meet. I am convinced that the general practitioner is not treating gonorrhea correctly, and that is the reason why the gynecologist is thriving as he is to-day. Fully 80 per cent. of the gynecologist's work is due to gonorrhea. When we take up another side of this problem, and realize that 40 per cent. of all the blindness in our asylums is due to gonorrhea, we must conclude that here is another enormous burden. In all probability deafness and consequent dumbness are frequently the result of infection of the ear by the gonococcus. So I say this paper is the most timely paper that has been presented to-day, tuberculosis and typhoid fever and all these subjects to the contrary notwithstanding. I do not believe we appreciate the magnitude of this problem. I think that I can safely say that no practitioner who watches a case of gonorrhea microscopically will ever be willing to give a person afflicted with gonorrhea a clean bill of health to be married. I have seen a large number of patients who have gone for months absolutely without any evidence that they had the disease, but when the prostate was thoroughly squeezed a discharge was yielded which was more or less rich in gonococci. In all the cases that I have treated, when the gonorrhea has run a course of more than six months, I have failed to find one, even though for six or eight months there had been no discharge, in which gonococci were not yielded in the prostatic secretion. The patient may even live a more or less irregular life without any symptoms of his gonorrhea, and yet the gonococci may be amply present in his prostatic secretion. As we come to use the microscope more, and express the secretion more carefully, we shall realize more and more the tremendous extent and persistency of this disease, which has received in past years altogether too little attention from the medical profession and from the laity.

DR. R. S. YARROS, Chicago: In the past the average physician has neglected his duty alike to the patient and his possible innocent victim; although knowing the dangers of gonorrhea, he has seldom told the patient the certainty with which this disease is communicated and the greater danger of the disease to infected women. But fortunately, there has been of late a moral awakening among the profession and the lay public as well with reference to this question, and the physician has no further excuse for shirking his duty. We have done considerable work in this city under the auspices of the Society for Social Hygiene and the Chicago Women's Club. A body of women have gone before most of the women's clubs in the city and suburbs, giving lectures on this subject, which have been received with great interest. It seems to me that it is the duty of the men in the profession to undertake a systematic propaganda among men. Each patient must be told of the dangers of his disease to those he might infect unknowingly and unwillingly. We must insist that a man who has gonorrhea shall not marry until he is cured, and in extreme cases, in which the patient refuses to take this advice, the innocent person must be given warning in some way. The time has come when we should take this definite stand to protect the innocent.

DR. O. C. BREITENBACH, Escanaba, Mich.: Attributing criminality to the transmission of venereal disease by either male or female, does not materially benefit the situation. Venereal disease is a social problem even more than a medical question. We all know the tenacity of a gonorrheal infection, and that this specific infection entails untold misery to those originally infected and to their offspring. The cure of gonorrhea is problematic, and therefore prevention of infection is of the highest importance. Education is the most efficient means toward this end. The American Medical Association and many of our state medical societies are putting forth efforts in this direction. It is gratifying to note the efficient cooperation of the laity. The efforts of Felix Adler, Graham Taylor, Jane Addams and many others promise good results.

DR. H. B. HEMENWAY, Evanston, Ill.: Several years ago a prominent druggist, who had been in the business thirty years, and who might naturally be expected to be better informed than the average man, asked me a question about the general dangers of gonorrhea. I suggested that heart disease might come from gonorrhea, and he was greatly surprised. He had been accustomed from time to time to accommodate his friends by putting up a mixture for treatment. When I met him not long ago he said: "From that day to this I have not dared to give any medicine for gonorrhea; I have sent inquirers to the physician." The real way to get at this subject is not simply to tell the doctor that he must instruct individual patients in what they must do, but to give general education. To-day a good share of the education in this line of work is given by very questionable publications that are distributed on the street corners or through the mail sometimes. The real and genuine education has been too much neglected. It is by talks in such associations as the Y. M. C. A., and through the regular publications, that the best education must come.

DR. J. N. HURTY, Indianapolis: We have a judge of the Indiana Supreme Court who stated that from his observations he had come to the conclusion that venereal diseases had an effect on crime and on insanity. He had watched many cases all the way from the lower courts to the Supreme Court, and after studying the matter, came to the conclusion that treatment of the disease would not be effective. I think that he is about right. It must be treated, of course, but that will do nothing or at least little toward prevention. What is to be done? Educate, you say. That is a long route, but it is the only one that seems to be left open to us. The judge to whom I have referred drew up a law, which was passed, making it illegal in Indiana for any person afflicted with venereal disease to marry knowingly. The State Board of Health has prepared a series of cards, which we call our red cards, one referring to gonorrhea and the other to syphilis.

These cards are distributed throughout the state to be handed by physicians to those who apply for treatment. I was once in a doctor's office when he received the cards, and he immediately threw them into the waste-basket, for he said that he would not cut off one source of his revenue. We have heard it said that pharmacists treat these diseases. I know that they do, for I spent a good part of my early life in a pharmacy. But what can be done? For a license to marry in Indiana one must go to the county clerk. We have, therefore, been instructing the county clerks about the prevention of the venereal diseases, so they might impress their responsibilities on young men and those who apply for licenses. At the present time both parties must, before a license is issued, swear to their best knowledge and belief they are not afflicted with any communicable disease. As yet I do not suppose much effect has been produced, but I hope that some time in the very near future we can report from Indiana a diminution in these terrible diseases, due to the efforts now being made.

DR. A. H. BURR, Chicago: I read a paper before this Section two years ago on "The Guarantee of Safety in the Marriage Contract," in which I called attention to the weakness and the failure of the Indiana law to bring about definite results. As far as the Indiana law went, it was good, but it did not go far enough. As you have heard from the last speaker, the men who diagnose the cases are not physicians. The applicant diagnoses his own case, and he is not going to confess to any venereal infection. It is not to his interest to do so. He swears that, to the best of his knowledge and belief, he is not a victim of the disease. He may have had it, and think he is cured, and yet may be incurable. The trouble with the Indiana law is that there is no board of examining physicians, and the applicant passes through no process of investigation to know whether he is a victim of an incurable disease or not. If Indiana had a law like that of North Dakota, with an examining board, so that every candidate for a license to marry must present a certificate signed by two physicians of the examining board, it might prevent some of these diseases from being transmitted through marriage. I have seen the cards of which Dr. Hurty speaks. Some were sent to me by the secretary of the Indiana State Board of Health, and I take great pleasure in handing one to every patient with venereal disease that comes into my office.

DR. FERD C. VALENTINE, New York: A speaker holds that gonorrhea is practically incurable when the whole genito-urinary tract is involved. Study and experience do not allow me to agree with this view. But, when gonococci invade the endocardium or the fourth ventricle of the brain, no remedy is known for the disease. Another speaker says that gynecologists thrive because general practitioners do not treat gonorrhea properly. Since specialists have done so much to teach the proper management of gonorrhea, the average general practitioner uses his best efforts in each case brought before him. The reason for the large amount of work that goes to the gynecologist lies in the public attitude. As yet relatively few men regard it as a moral duty to be examined before marriage. Indeed, it requires more than ordinary intelligence to appreciate that long after all crass manifestations of gonorrhea have disappeared, the patient may still be able to infect his wife. To obtain statistics regarding gonorrhea would entail reporting every patient with gonorrhea to the board of health. This would, in most instances, reveal the patient's immorality, break up homes, destroy the happiness of wives, deprive children of their fathers and involve violating our most sacred obligations. Rather than do these things, I would defy such a law and suffer incarceration for infringing it. The statement that no general practitioner would give a gonorrheic a clean bill of health led to the preparation of the paper we are discussing. The general practitioner is seldom called on to examine a patient before marriage. The reason is largely that the general practitioner, not being specially instructed in the technic of such examination, usually refers his patients to competent specialists. There are not, and there never can be, enough genitourinary specialists to treat gonorrhea. It therefore behooves the general practitioner everywhere to familiarize himself with this disease, and to examine his patients who have had active gonorrhea to determine whether they harbor residual gonococci. The man who has acquired gonorrhea is often unthinkingly condemned. Optimism and humanitarian sentiments demand a consideration of the matter in its true light. The majority still hold that for the male premarital sexual relations are natural. Whatever the cause of his acts, no man deliberately sets out to acquire gonorrhea. It is outside the province of the physician to act as the judge of such unfortunates. It is our duty simply to prepare ourselves to treat gonorrhea properly, and while so doing to endeavor to raise the patient's moral tone. It has been said that it should be the physician's duty to inform the woman with whom a gonorrheic intends to have legal or other sexual relations, of the fact of his infectiousness. I know of no means by which the physician could obtain information of the intention; and, if he could, nothing could excuse the violation of professional confidence. Moreover, the woman would resent the warning. The work of educating the public is being so excellently performed by our American Society of Sanitary and Moral Prophylaxis that a hope to see its membership reach a million in the next year or two is fully justified.

It is regrettable that Tarnowsky's "Prostitution und Abolitionismus," one of the most important books on this subject, has not yet been translated into English. It quotes anthropometric studies of 500 prostitutes, every one of whom had at least one stigma of degeneration. Thus prostitution was stamped on them before birth. Fournier has shown that public prostitutes disseminate venereal diseases less than do others. The greatest number of men are infected by clandestine prostitutes; they are beyond the reach of the written law or of moral precepts.

THE CLINICAL VALUE OF THE SPIROCHÆTA PALLIDA IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS.

FREDERICK G. HARRIS, M.D.

Adjunct Professor of Dermatology, College of Physicians and Surgeons, Medical Department, University of Illinois.

AND

B. C. CORBUS, M.D.

Lecturer on Dermatology and Genito-Urinary Diseases, Post-Graduate Medical School.

CHICAGO.

When Schaudinn[1] in 1905 described the *Spirochæta pallida* as the probable cause of syphilis, the study of that disease received a new stimulus. As usual, the discovery of the cause of a disease is followed very shortly by a broadening of our knowledge of that disease. So it has been with syphilis. The research and experiments which were stimulated by Schaudinn's report and made possible by the discovery of Metchnikoff and Roux[2] in 1903 that syphilis could be inoculated into the higher apes, have already illumined so many of the dark places of this protean disease that the time seems to be not far distant when syphilis will be given a rational pathology and a logical therapy.

For the practitioner animal inoculation has merely a scientific interest. The demonstration of the spirochete on the other hand, has the same significance for syphilis that the presence of the tubercle bacillus has for tuberculosis or the gonococcus has for gonorrhea, and the demonstration of the spirochete is just as essential for diagnosis—in fact, in the case of primary syphilis is even more essential.

That the *Spirochæta pallida* is the true etiologic factor in syphilis, all who have followed the literature must concede. It would be impossible to give here a résumé of all the work that has been done on this subject, the

1. Arb. a. d. k. Gesdhtsamte., 1905, xxii, No. 2, p. 527.
2. Ann. de l'Inst. Pasteur, xvii.

bibliography being already very extensive. The following facts represent briefly the principal reasons for considering the organism specific.

1. It has been found innumerable times by observers in all parts of the world.

2. It has only been found in syphilitic, never in non-syphilitic lesions.

3. It has been found in the lesions of every stage of syphilis, even in the gummatous or so-called tertiary stage.

4. It has been found in every type of syphilitic lesion.

5. Syphilitic material containing spirochetes has been inoculated into monkeys and the spirochete demonstrated in the lesions so produced. Material from these lesions produced the disease in a second series of monkeys and so on for forty-two successive inoculations, all the lesions of which showed the spirochete.[3]

6. Human material containing the spirochete gives the reaction for antigen with the serum of syphilitics.

It is a fact that the medical profession of the United States has been rather loath to accept the spirochete as the specific cause of syphilis. Those of the profession who have accepted it have not appreciated the great value of the organism as an aid to diagnosis and treatment. One reason for this has been the difficulty of staining the organism, as is evidenced by the numerous methods advocated for that purpose, none of which is very reliable. By the best method the organisms stain so faintly that it usually requires a prolonged search to find them. Again, it is very difficult to differentiate the stained specimen from other spirochete-like organisms. Hoffmann, Schaudinn's collaborator in the discovery, has emphasized this difficulty and he says that in a stained specimen the diagnosis should only be made by an expert, one who by close familiarity with the organism has acquired an intuitive knowledge of its morphology. It is a fact that the stained specimen lacks some of the characteristics of the living organism, chief of which are:

1. In the stained specimen the organisms are much less numerous than when the same material is examined fresh.

2. The method of preparing the specimen causes the organisms to lose to a certain extent the acute winding of the spirals, which is so characteristic of the living organisms.

3. Probably one of the greatest disadvantages of the stained specimen is the absence of motility. The motions of the spirochete are very characteristic and are of inestimable assistance in differentiating the pale from other spirochetes.

THE DARK GROUND ILLUMINATOR.

A much more convenient as well as infinitely more reliable method of demonstrating the organism is in the living state, by means of the so-called dark ground illuminator. This method was described by the Rev. J. B. Read in 1837, who used practically the same apparatus that we are using to-day. Read described his method just at the time that Professor Abbé brought out his well-known substage condenser and in the excitement over Professor Abbé's invention the dark ground illuminator was forgotten until rediscovered by Reichert, the microscope manufacturer of Vienna, in 1907.

The advantage of this method depends on the illumination, the principle of which is the same as that causing dust particles to become visible when passing through a beam of sunlight.

The apparatus of Reichert (Figs. 1 and 2) consists of a metallic plate (Fig. 2, A), having a hole in the center, above which is fitted a piece of glass (Fig. 2, B), having a circular excavation on its under surface; the sides of this excavation are ground at a certain angle and silvered (Fig. 2, C, D). By means of a revolving disc (Fig. 2, E) different sized diaphragms are used to cover the central part of the excavated area, so that when the light is reflected up from the plane mirror of the microscope, only the marginal rays reach the glass plate. These impinge on, and are reflected by the silvered sides of the excavation to a central point 1 mm. above the surface of the glass plate. Any solid body here will intercept these rays and appear as luminous objects on a dark ground. By this method it is possible to see the particles of colloidal substances in their solutions.

THE REICHERT INSTRUMENT.

A form of dark ground illuminator is now manufactured by most of the microscope makers, but the Reichert instrument is superior to others for the following reasons:

1. It can be used on any kind of microscope.

2. By means of the revolving diaphragm the amount of light may be varied at will.

3. It is possible to change from the dark ground method to the ordinary method of transmitted light by merely revolving the diaphragm.

The method of using the apparatus is as follows:

The Abbé condenser is removed. A strong light is necessary; one may use sun or arc light, a Nernst lamp, or an inverted Welsbach. Except with the sun or arc light, a six-inch condenser lens is necessary, or a large glass globe filled with water serves the same purpose. The illuminator is placed on the stage of the microscope, and by means of the low power the circle which is etched on the glass plate is brought into the center of the field and the apparatus fixed in this position by means of the clips on the microscope. A drop of immersion oil, free from air-bubbles, is placed on the center and the prepared slide put in place, great care being taken to avoid the formation of air-bubbles. When the preparation is examined with the low power, if the light is placed right and the apparatus centered, one observes a bright central point. The high power is now turned on and the field is seen to be dark, with luminous points and bodies.

PREPARATION OF THE SPECIMEN.

The method of preparing the specimen is very important. The slide must be 1 mm. thick, and both slide and cover-glass must be perfectly clean and well polished, as any turbidity or scratches disperse the light and cause annoying halos, which prevent the dark ground effect or interfere with the examination. Air-bubbles in the specimen also cause these disturbing effects. The specimen must be as thin as possible. The observation is best made with a dry system. We use a Leitz ⅙-inch objective and a No. 5 ocular. One can use an oil immersion; in this case, however, it is necessary to diminish the aperture of the objective by inserting a truncated cone back of the front lens of the objective. This cuts out the diverging rays of light, which otherwise would flood the field. For diagnostic purposes we have seldom found it necessary to use the oil immersion.

3. E. Finger: Personal communication.

METHOD OF OBTAINING THE MATERIAL.

For chancres, mucous patches and condylomata it is sufficient to clean the lesions thoroughly with warm water. They are then irritated by being rubbed vigorously with a piece of cotton wrapped on a probe. This causes an abundant exudation of serum. A small drop of this is placed on a cover-glass, which is now carefully inverted on to the slide as in making a fresh blood preparation. It is well not to have much admixture of blood, as the blood cells interfere somewhat with the observation. For cutaneous lesions one may take a drop of blood from the lesions and often find the organism. The best method, however, is to scarify the lesion down to the papillary layer and then apply a small cupping glass. The abundant exudate of serum usually contains numerous spirochetes.

On looking at a specimen containing serum from a chancre one sees numerous small, round luminous bodies which have a very active Brownian movement. These particles of albumin are probably identical with the blood-dust of Müller. If the cleansing has not been thorough, one often sees various forms of bacteria, the cocci looking like pearls. The leucocytes are seen as a mass of white granules surrounding the dark nucleus, the various forms being easily differentiated. One often sees the ameboid movement and the granules in an active Brownian motion. The red corpuscles show as a luminous ring surrounding a central pale reddish zone.

CHARACTERISTIC FEATURES OF THE SPIROCHETES.

The spirochetes are typical, much more so than in the stained specimen, and are exact duplicates of those stained by the Levaditi method. The most characteristic features are:

1. *Size*:—They vary in length from 7 to 21 microns, being from 1 to 3 times the diameter of a red blood cell. It is not uncommon to see the organism longer than this, but on account of the difference in the motions of the two extremities, we believe these long forms are composed of two or more individuals.

2. *Shape*:—They are seen to consist of an extremely slender thread closely wound in a corkscrew or spring form, the windings being very acute. In the fresh specimen the windings are absolutely regular, but as the specimen gets older the organism changes form, the most frequent change being an obliteration or irregularity of the windings in the central portion. This is a very common appearance in the stained preparations.

3. *The Ends*:—These are sharp and terminate on the periphery of the spiral and not in the center, as the *Spirochæta buccalis* and some of the other forms do. This peculiarity of the ends is only seen when the organism rotates on its long axis

4. *Motility*:—When the specimen is freshly prepared the organism is very active and possesses the following motions: (a) A rotation on its long axis in either direction; this motion is very rapid but not necessarily accompanied by a change of position; as the specimen gets older this motion grows less. (b) It progresses from place to place but not so rapidly as the other forms of spirochete commonly met. (c) They have a bending or twisting motion which is quite quick and spasmodic. This form of movement increases as the specimen gets old and at times one sees an organism bent in the form of a circle, resembling somewhat a crenated red blood corpuscle. It is not uncommon to find two organisms joined end to end. In fact this arrangement is so common that it lends some weight to the view that the organism multiplies by fission Again, one sees two or three organisms lying side by side. We have never found the spirochete in a red or white blood corpuscle as described and pictured by some observers in the stained specimen, and we are inclined to believe such appearances are artifacts.

The number of organisms found varies in the different lesions. They are most numerous in chancres, condylomata and mucous patches and vary from two or three in a field to sixty or eighty. Cases that have received some treatment show fewer organisms than the untreated ones. A few days local treatment with calomel or other mercurial preparations causes a marked diminution in the number present in the chancre, although they are very numerous in the enlarged inguinal glands. Among the cutaneous lesions, aside from the condylomata and mucous patches, the ulcerative syphilides show the most organisms. As a general rule, one may say that the more succulent the lesion the more numerous are the organisms.

In several patients having large placques on the tonsils we found the sputum teeming with the organisms, and in these specimens one can study the differences between the *Spirochæta pallida* and the *S. buccalis* and *S. dentium*. We have never been able to convince ourselves of the presence of cilia or of an undulatory membrane, although there are times when one is suspicious that the latter might be present.

The organism when fresh is very active, but in about three-quarters to one hour after preparing the slide the movements become spasmodic and much less frequent and malformations occur. We have kept the organisms at the room temperature for two weeks or more, but at the end of that time one could not say whether or not they were alive, they certainly were not motile and had not multiplied. In capillary tubes we have had the organisms remain alive and motile for twelve hours at the room temperature.

The *Spirochæta pallidæ* as seen by this method, after some experience, are not difficult to differentiate from other organisms. The older the specimen the more difficult it is. The fresh specimen is very typical, and by close study of the size, windings and movements can be differentiated from other forms. The thread is much thinner, the windings more acute and the motility, as to locomotion, less than the other forms met. We have often seen a very much thinner and shorter body, that seems to have an extremely rapid rotary motion, which gives it the appearance of having a spiral form with knobbed ends. Its bending motion is marked but its locomotion is poor. These bodies vary greatly in size and are very common. As to their identity and significance we are unable to make any statement. We have found them in both syphilitic and non-syphilitic lesions.

LESIONS EXAMINED.

We have examined 160 lesions in 139 cases for spirochetes. The material was obtained from Dr. W. A. Pusey's service at the County Hospital, Dr. W. L. Baum's clinic at the Post-Graduate Medical School and from our private practice. Of the 139 cases 76 were clinically syphilis, in 59 of which we found the spirochete. (See Table 1). The lesions examined were as follows:

Chancres, 23; spirochetes were present in all.
Flat condylomata, 21; spirochetes present in all.
Mucous patches, 19; spirochetes present in all.

Cutaneous syphilides of various sorts, 33, in only 16 of which were we able to find the spirochete.

We found the spirochetes in two cases in which we punctured the enlarged inguinal glands.

TABLE 1.

No.	Case.	Lesion examined.	Result.	Remarks.
1.	M. L.	Chancre finger	+ + +	
2.	A. M.	Chancre lip	+ + +	
3.	F. V.	Chancre penis	+ + +	Excision.
4.	J. W.	Chancre penis	+ + +	
5.	J. W.	Condyloma	+ + +	
6.	J. W.	Mucous patch	+ +	
7.	E. B.	Chancre penis	+ +	Calomel locally.
8.	E. B.	Inguinal glands	+ + +	
9.	H. J.	Chancre penis	+ + +	
10.	C. A.	Chancre penis	+ + +	
11.	L. M.	Chancre penis	+ +	
12.	O. E.	Chancrous erosion	+ +	
13.	F. S.	Chancre penis	+ + + + +	
14.	P. G.	Chancre penis	+ + +	
15.	G. R.	Chancre lip	+ + + +	
16.	T. S.	Chancre penis	+ + +	
17.	S. C.	Chancre penis	+ +	
18.	J. F.	Chancre penis	+ + + +	Excision.
19.	M. R.	Chancre penis	+ + + +	
20.	R. D.	Chancre penis	+ + + +	
21.	R. D.	Condyloma	+ + +	
22.	J. G.	Chancre penis	+ + +	
23.	J. G.	Papule	+ +	Ulc. pap. (scalp).
24.	Q. U.	Chancre penis	+ + + +	
25.	Q. U.	Ulcerated papule	+ + + +	
26.	Q. U.	Inguinal glands	+ + +	
27.	J. T.	Chancre penis	+ +	4 days loc. and int. treatment.
28.	T. B.	Chancre penis	+	
29.	T. T.	Chancre penis	+ + +	
30.	A. G.	Chancre penis	+ + +	
31.	M. P.	Condyloma	+ + +	
32.	J. G.	Condyloma	+ +	
33.	J. G.	Ulcer. papule trunk	+ +	
34.	T. K.	Condyloma	+ + +	
35.	F. M.	Condyloma	+ + +	
36.	M. P.	Condyloma	+ + +	
37.	M. P.	Tonsillar patch	+ + +	Many spir. in sputum.
38.	P. G.	Condyloma	+ + +	
39.	F. E.	Condyloma	+ + +	
40.	T. M.	Condyloma	+ + +	5-9-'08.
41.	T. M.	Mucous patch	+ +	7-25-'08.
42.	G. R.	Condyloma	+ +	
43.	N. S.	Condyloma	+ + +	
44.	E. K.	Condyloma (anal)	+ + +	
45.	E. K.	Condyloma (toe)	+ + +	
46.	H. H.	Condyloma	+ + +	
47.	P. S.	Condyloma (anal)	+ + +	
48.	P. S.	Condyloma (toe)	+ + +	
49.	P. S.	Mucous patch	+ + +	
50.	P. S.	Pustule	+ + +	
51.	R. P.	Condyloma	+ + +	
52.	R. P.	Mucous patch	+ + +	
53.	M. C.	Condyloma	+ + +	
54.	M. C.	Mucous patch	+ + +	
55.	J. H.	Condyloma	+ + +	
56.	J. H.	Mucous patch	+ +	
57.	J. H.	Papule	+ +	Non-ulcerated.
58.	A. R.	Condyloma	+ + +	
59.	K. R.	Mucous patch	+ +	
60.	K. R.	Papule	+ +	Ulcerated.
61.	A. P.	Mucous patch	+ +	
62.	G. H.	Mucous patch	+ + +	
63.	B. C.	Mucous patch	+ + +	
64.	H. M.	Mucous patch	+ +	Cerebral syphilis.
65.	S. Q.	Tonsillar patch	+ + + +	Spir. in saliva.
66.	R. M.	Mucous patch	+	10 inunctions.
67.	R. M.	Papule (scalp)	+	Ulcerated.
68.	J. M.	Mucous patch	+	2 weeks treatment.
69.	S. K.	Mucous patch	+ +	Syphilis, 1½ years duration.
70.	E. H.	Mucous patch	+ +	Syphilis, 3 years duration.
71.	G. C.	Mucous patch	+ + +	
72.	G. C.	Papule	+	Non-ulcerated.
73.	G. O'D.	Mucous patch	+ +	Syphilis, 1 year duration.
74.	F. M.	Papule	+ + +	Non-ulcerated.
75.	R. K.	Serum (vesicle)	+ +	Congenital syphilis.
76.	M. B.	Papule	+ +	Non-ulcerated.
77.	E. R.	Papule	+	Non-ulcerated syph., 1½ years.
78.	R. S.	Blood from macule	+ +	No primary lesion.
79.	N. O.	Papule left/arm	+ +	Non-ulcerated.
80.	N. O.	Papule (forehead)	+	Non-ulcerated.
81.	J. P.	Papule	+ +	Non-ulcerated.

Plus marks indicate the relative number of organisms present.

It will be observed that the organisms were always found in chancres, mucous patches and condylomata. The seventeen cases in which we failed to find the organism were mostly cutaneous lesions (see Table 2), most of which were late forms and many had been on antisyphilitic treatment. As we now know that all foci of syphilitic inflammation contain the spirochetes, we believe our failure to find them in these seventeen cases was due to a faulty technic. At first we scarified the lesion and examined some of the serum and blood so obtained. This method not proving very successful, we tried to get serum by applying a minute cantharides plaster over the center of the lesion. This method was somewhat more successful but still not all that could be desired. Recently we have returned to the scarification, but in addition we use a cupping glass as described above. This method affords an abundant exudate of serum, which often contains numerous spirochetes. We have no doubt that if we had used this method in our earlier cases we should have found the organism in practically all of the cutaneous lesions.

TABLE 2.

No.	Case.	Lesion examined.	Result.	Remarks.
1.	D. S.	Tubercular syphilide	Neg.	One examination.
2.	S. S.	Tubercular syphilide	Neg.	9 mos. duration.
3.	G. N.	Lichen syphiliticus	Neg.	
4.	M. C.	Lichen syphiliticus	Neg.	
5.	J. M.	Tubercular syphilide	Neg.	Of palm, 6 mos. treatment.
6.	W. B.	Mucous patch	Neg.	One examination.
7.	E. B.	Mucous patch	Neg.	Treatment.
8.	L. T.	Tubercular syphilide	Neg.	Treatment.
9.	L. B.	Tubercular syphilide	Neg.	Treatment.
10.	E. N.	Tubercular syphilide	Neg.	Treatment.
11.	J. F.	Tubercular syphilide	Neg.	Treatment.
12.	N. J.	Papule	Neg.	Treatment.
13.	J. J.	Gumma of ankle	Neg.	
14.	H. H.	Gumma of buttock	Neg.	
15.	M. B.	Gumma of palate	Neg.	
16.	B. L.	Gumma of palate	Neg.	
17.	O. P.	Tubercular syphilide	Neg.	Treatment.

VALUE OF EARLY DIAGNOSIS.

Among the syphilitic cases are several which are especially interesting. Number 18, Table 1, shows the great practical value of this method in the diagnosis of primary lesions. It was that of a married man who presented himself with two ulcers, the largest less than 1 cm. in diameter, on the foreskin, of five days' duration. There was slight inguinal adenopathy on the left side. Instead of waiting six weeks or two months to see if secondaries developed, we examined some of the serum from the ulcers and found it teeming with spirochetes. The chancres were excised and the patient immediately put on anti-syphilitic treatment. The wounds healed by primary intention and there have been no signs or symptoms of the disease since.

This line of procedure might give rise to some criticism, in answer to which we would say that this seemingly radical treatment was not undertaken with the hope that we could certainly prevent the systemic invasion, for, although we had no evidence of such dissemination having taken place (the inguinal glands being so small as to make it questionable as to whether they were infected), we believe that a logical therapy would indicate the removal of the known source of absorption and the institution of immediate treatment would destroy any organisms which had progressed beyond the local focus. At least after demonstrating the ulcers to be syphilitic, this procedure might possibly prevent a dissemination and certainly would prevent from six to eight weeks intoxication and limit the dissemination of the virus. This line of treatment was particularly valuable in this case, as the patient soon ceased to be a source of danger to his family. (See also case No. 3).

After the primary sore has been found to contain the *Spirochæta pallida* by a competent observer we believe excision, when possible, and when not possible deep cauterization, and in either case the immediate institution of anti-syphilitic medication is the proper and logical

treatment. Nisser[4] in recording some animal experiments along this line advocates the excision treatment when possible. It is possible in almost all cases except those in which the initial lesion is on the lip, finger or glans penis.

It is just here that this method of demonstrating the organism of syphilis will find its greatest usefulness, for we will no longer be compelled to make use of what Julien has called a "scientific monstrosity" and wait until the system is saturated with a virus before commencing treatment. Who can say what effect the institution of a logical therapy, commenced early in syphilis, may have on the development of the so-called parasyphilides? Is it going too far to predict that when this line of treatment becomes general, cases of tabes and paretic dementia will become medical curiosities and the incidence of cardio-vascular disease will be greatly lessened? In fact is it not possible that all those diseases in which syphilis plays an etiologic rôle will become less frequent?

Although the greatest valne of this method of demonstrating the *Spirochæta pallida* is in the diagnosis of

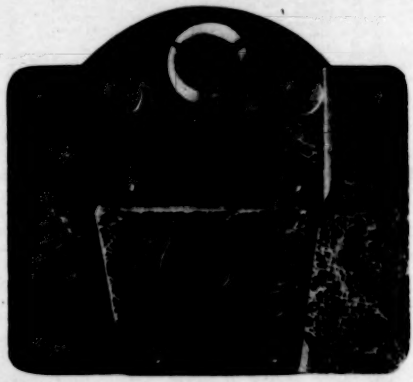

Fig. 1.—The Reichert apparatus for "dark-ground" illumination; to be attached to the microscope stage.

chancres, it is also of immense value in controlling our cases while under treatment. It is a common thing for a case of syphilis, while under treatment, to develop a lesion on some part of the body, most commonly in the mouth, and it is extremely important to know whether such a lesion is syphilitic or not. *Adequate anti-syphilitic treatment presupposes the absence of all syphilitic lesions.* A case in point is the following: A man (Case 69, Table 1), whose infection was of 1½ years' duration, had received a course of inunctions, a course of injections and also a course of protoiodid pills. Three weeks after ending his course of pills he presented himself with what he called a "cold sore" on the lip. Examination of serum from this innocent looking sore showed numerous *Spirochætæ pallidæ*. Without this examination one might have thought that the lesion was in reality a "cold sore" or a mercurial ulcer, when it was in fact a mucous patch and instead of the patient receiving too much mercury he was not getting enough. Cases Nos. 70, 73 and 77 were similar ones, all of which had been on treatment for from one to three years, and in spite of this we were able to demonstrate the spirochetes in the mouth lesions. We could cite numerous other cases showing the great practical value of the spirochete as an aid to diagnosis and treatment, but they will form the subject of a future communication.

4. Die experimentelle Syphilis-Forschung nach ihrem gegenwärtigen Stande, Berlin, 1906.

NON-SYPHILITIC CASES EXAMINED.

Among the non-syphilitic cases examined were: Thirty-six chancroids; 2 cases of traumatic ulcer of the penis; 1 case of carcinoma of the rectum; 4 cases of mercurial stomatitis; 2 cases of catarrhal stomatitis; 1 case of rodent ulcer; 3 cases of balanitis circinata; 1 case of chronic connective tissue hyperplasia of the vulva; 2 cases of exudative erythema with lesions of the buccal mucous membrane; 2 cases of herpes labialis; 1 cases of herpes zoster; 1 case of pemphigus vulgaris; 1 case of dermatitis; 1 case of erythrodermia; 1 case of blastomycosis; 1 case of elephantiasis of foreskin; 2 cases of psoriasis. In all of these cases the spiorchetes were absent, although clinically many of them were suspicious of syphilis.

In the case of chancroids a negative finding does not exclude syphilis, for the reason that the period of incubation of the chancre might not have passed. Most of the hospital cases of chancroids we were unable to follow, none of our private cases ever showed any manifestations of syphilis.

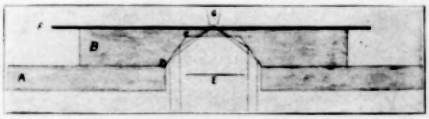

Fig. 2.—Diagram showing the principle of the "dark-ground" illuminator. A, metallic plate; B, glass plate; C, D, silvered sides of aperture in glass plate; E, diagram; F, microscope slide; G, objective.

There has been a great deal of discussion as to the spirochetal nature of the objects obtained by the Levaditi method of staining. A comparison of the living organism with those obtained by the Levaditi method will show that they are identical and immediately disposes of the suggestions that the Levaditi organisms are artifacts, nerve fibrillæ, cell borders, etc. That this method of finding the organisms is a great advance over all staining methods will be readily appreciated by all who have made the long, tiresome search with the old methods. Also the spirochetes are so much more characteristic that the differentiation is not at all difficult.

We have made some agglutination experiments, but as yet have not obtained the same results as Zabolotny,[5] who has reported the agglutination and disintegration of the spirochete with syphilitic serum. We hope to be able to report more definite results along this line.

CONCLUSIONS.

As a result of our investigations we believe we can draw the following conclusions:

1. The *Spirochæta pallida* is the true cause of syphilis and its presence is equivalent to the diagnosis of syphilis. Its absence does not rule out syphilis.
2. The silver spirochetes are true organisms.
3. By means of this method the spirochete may be demonstrated in all primary and secondary lesions of syphilis, if the search is persistent.

5. Russk. Vrach., 1907, No. 6.

4. *After demonstrating the organism in a primary lesion it is not only unnecessary but harmful to wait for secondary manifestations. The most logical therapy is excision of the chancre when possible, and in all cases the immediate institution of the vigorous antisyphilitic treatment.*

In conclusion we wish to call attention to the great value of the dark ground illuminator for the demonstration of the *Spirochæta pallida* and to emphasize the necessity and value of the demonstration of the spirochete in the diagnosis and treatment of syphilis where there are accessible lesions. In suspected cases with no lesions and in cases in which there are cutaneous lesions, in which we fail to find the spirochete, we have found the Wassermann serum diagnosis of great value. As it is, these two procedures practically give us control of the diagnosis of syphilis, and it is to be hoped that the near future will give us a reliable method of detecting syphilitic antigen and thus furnish us with an absolute method of saying when the disease is cured.

Room 407, 103 Randolph Street.

CEREBELLAR SYMPTOMS IN HYDROCEPHALUS;

WITH A PATHOLOGIC REPORT OF A CASE ASSOCIATED WITH SYRINGOMYELIA.*

JOHN H. W. RHEIN, M.D.

Neurologist to the Howard Hospital; Physician to the Philadelphia Home for Incurables.
PHILADELPHIA.

Cases of hydrocephalus exhibiting cerebellar symptoms, while not very rare, have been recorded in the literature with sufficient infrequency to warrant a report. The case to be reported is of still further interest on account of the probable cause of the cerebellar symptoms, which, if not unusual, has been infrequently described. The presence of a well-marked syringomyelia, which was not suspected during life owing to the absence of at least some of the characteristic clinical manifestations, is of additional interest.

History.—J. G., a boy, 8 years old, was admitted to the Howard Hospital, Jan. 8, 1908. The patient first applied to the dispensary of the Howard Hospital Nov. 2, 1905. The previous history was entirely negative. Ten days before his first visit he began to have headaches, associated with vomiting, which occurred before breakfast, although at other times during the day as well. He also complained of frontal headaches. The physical examination at that time showed that the head was enlarged. Examination of the eyes by Dr. William Campbell Posey was negative. Shortly after this there developed a spastic gait, but otherwise nothing of importance was noted until two years later, Nov. 29, 1907, when the child returned again to the clinic with a history of vomiting, attacks of frontal headache and general tremor. Station was poor, and the knee jerks were increased. There was a history of a general convulsion three years previously, and of several attacks, in which the patient fell, during the past year.

Examination.—He was admitted to the wards of the Howard Hospital on Jan. 8, 1908, when his condition was as follows: There was a coarse, irregular tremor of both hands on voluntary effort. The eyes were prominent, and the palpebral fissures unusually wide, showing the cornea above the pupil. The tongue was protruded straight, and there was no facial palsy. There was no stiffness of the neck, nor apparent tenderness in that region. There was a coarse, irregular tremor of both legs. The knee jerks were increased, and equally so. There was no ankle clonus, but the Babinski phenomenon was present on the left side. Kernig's sign was also present. The pain sense was generally preserved. Unfortunately a test for the other forms of sensation was not made, and the need of it was not specially indicated, for the patient did not give any history of burning himself without being conscious of it until afterward, a sign so characteristic of the early stages of syringomyelia. Moreover, there were no local atrophies to attract attention to the possibility of the existence of syringomyelia. The patient staggered when walking, and seemed to be weaker in the left leg than in the right. The sphincters of the bladder and rectum were incontinent.

Jan. 12, 1908, the headache was very severe; the head was retracted and the neck stiff. Any movement of the head increased the pain, which appeared to be general. At this time the knee jerks were slightly diminished, and there was a tendency to fall to the left, with the feet together and the eyes closed.

The patient died suddenly.

Fig. 1.—View of the hydrocephalic brain, showing two cysts, A and B.

Autopsy.—When the brain was removed, 6 to 8 ounces of cerebrospinal fluid escaped, and the very much distended brain collapsed to a certain extent. What appeared to be two cysts were observed at the cerebello-pontile angles (Fig. 1, A and B), the one on the left being the larger. These were distended with fluid, which escaped when the brain was removed.

The brain was placed in formalin, and the spinal cord in Müller's fluid. The entire cord was divided up into 23 approximately equal portions, and sections from half of these were stained by the Weigert method and by hematoxylin and acid fuchsin.

Cord: The spinal cord was the seat of a syringomyelia which extended from the eighth thoracic to about the second cervical segment.

At the second cervical segment there was a small cavity to the right of the central fissure. There was slight degeneration of the posterior columns, and the left crossed pyramidal tract.

In the fourth cervical segment the same condition was observed, and here also there was a slight dilatation of the central canal. In both posterior horns an area of loose tissue was observed in which were found several spider cells.

At the sixth cervical segment the central canal was very

* From the Howard Hospital and Department of Neurology and Laboratory of Neuropathology of the University of Pennsylvania.
* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

much distended. There was slight degeneration of the left crossed pyramidal tract. At this level there was a cavity in the right posterior horn, and in the wall of this cavity spider cells were seen.

In the eighth cervical segment the central canal was very much dilated and hour-glass shaped, occupying a large part of the posterior column. There was a large cavity in the right posterior horn and a small one in the left posterior horn. On the right side there was hemorrhage into the tissue of the wall of the cavity. The left crossed pyramidal tract was degenerated. At the second thoracic segment the central canal was large and round, and there was still a small cavity in the right posterior horn. Very slight degeneration of the left crossed pyramidal tract was observed. Both posterior horns were the seat of loose tissue, presenting the same characteristics as the levels above described.

In the third thoracic segment the central canal was irregular in shape, extending into the right posterior horn, and occupying a large part of the posterior columns on both sides

Fig. 2.—Cross-section of the hydrocephalic brain showing distension of the lateral ventricles.

of the median line. The degenerative process, present in the left horn, extended, at this level, into the anterior horn, and was less marked than in the levels above. In the fifth thoracic segment the right posterior horn was almost entirely destroyed by the cavity, and also part of the anterior horn, and the dilated central canal occupied the posterior part of the left horn.

At the eighth thoracic segment there was a small cavity in the left posterior horn. At the ninth thoracic segment the cavity disappeared, and the central canal was not materially distended. There was no trace of degenerated tissue in the horns. At the segments below this level nothing abnormal was observed.

At the decussation the medulla appeared to be normal, except for some central loose tissue, probably of gliomatous nature. The ganglion cells of the anterior horns in the thoracic and lumbar regions, stained by thionin, appeared to be normal.

Brain: Both lateral ventricles were very much distended (Fig. 2). The third ventricle was also greatly distended, pushing the tissues of the interpeduncular space downward. The aqueduct of Sylvius was very much distended, as well as the fourth ventricle (Fig. 3, C), especially the cerebellar portion.

The lateral processes of the fourth ventricle, and this is to be especially noted, were very much dilated (Fig. 3, A and B), and were continuous on each side with the cysts situated at the cerebello-pontile angles. That is to say, the portions of these recesses which came in contact with the subarachnoid space were not closed in as usual. The cerebrospinal fluid had apparently forced the arachnoid and pia out in such a way as to give the appearance of a cerebellar cyst on each side. The foramina of Magendie and Luschka could not be found.

Microscopically the ependyma of the lateral ventricles was not abnormal. The wall of the cyst on one side consisted of a pia-like structure, somewhat thicker, however, than the normal pia.

SUMMARY.

A boy of 8 presented the characteristic symptoms of cerebellar disease, slightly more marked on the left side. At autopsy a hydrocephalus was found, involving all the ventricles of the brain, distending the lateral recesses of the fourth ventricle and causing cysts at both cerebello-pontile angles. There was associated with this a syringomyelia which did not cause the characteristic symptoms during life.

It is not unusual for the symptoms of syringomyelia in children to be absent, even when well-marked cavity

Fig. 3.—Showing, A and B, distended lateral recess of the fourth ventricle; C, distended fourth ventricle.

formation is present. This is illustrated in the case reported by Bullard and Thomas,[1] as well as by my own. Bullard and Thomas' patient, a boy 6½ years old, presented the symptoms of cerebellar lesion, and later there developed paraplegia and incontinence of urine and feces. The autopsy revealed the presence of hydrocephalus and syringomyelia, the latter not having been suspected during life.

In cases of hydrocephalus the possible presence of syringomyelia should always be recognized, even when the usual symptoms of the latter are lacking.

The occurrence of cerebellar symptoms in cases of hydrocephalus is well known. Spiller,[2] in 1902, reported a case of hydrocephalus with symptoms suggesting cerebellar tumor and expressed the view that the possibility of internal hydrocephalus should always be borne in mind when tumor of this portion of the brain is suspected. He cited the cases of Bramwell,[3] in which the cerebellar symptoms were apparently due to hydrocephalus.

Since then Finkelburg[4] reported a case in which cerebellar symptoms were associated with moderate dilatation of all the ventricles. He stated that cerebellar gait occurred in chronic hydrocephalus, as well as with tumors of the central ganglia, as an early symp-

1. Am. Jour. Med. Sc., 1899, cxvii, 265.
2. Am. Jour. Med. Sc., 1902, cxxiv, 44.
3. Brain, 1899, xxii, 66.
4. Deutsche. Ztschr. f. Nervenheilk., 1905, No. 29, p. 135.

tom. He believed that normal or lowered tendon reflexes are not against a chronic hydrocephalus. Circumscribed tenderness to pressure or blows on the cranium is found in chronic hydrocephalus, and has, therefore, no diagnostic value.

Schmidt[5] suggested a symptom which he claimed was of great diagnostic significance in deciding between hydrocephalus and cerebellar tumor. It consists of the appearance of vomiting and vertigo if the patient lies on the side opposite to a tumor. He reported two cases of cerebellar tumor in which the patients would constantly lie on the side of the tumor, and concluded from this that the pressure from the tumor on the aqueduct of Sylvius, if the patient would lie on the opposite side, caused closure of this aqueduct, and hence an increase in intracranial pressure. Finkelburg does not subscribe to this view, as he believed that these symptoms are found in other localized tumors of the brain. Schmidt believes that the Westphal phenomenon points to a tumor rather than to an idiopathic hydrocephalus.

The cause of cerebellar symptoms in hydrocephalus is difficult to explain in all cases. I believe that the increased intracranial pressure in my case, which was exerted more particularly on the cerebellum at the localities at which the cysts were found, explains the presence of these symptoms in this case and may have had something to do with the slight predominence of the symptoms on the left side, as the cyst on this side apparently had compressed the left lobe of the cerebellum. When the fourth ventricle, however, is not enlarged, and the intracranial pressure is not, therefore, high in the neighborhood of the cerebellum, this explanation is not sufficient. It must be due to another cause—probably the weight of the hydrocephalic brain on the cerebellum.

Descriptions of cysts, such as those in my case, have not appeared frequently in the literature. Scholz[6] divides cysts of the cerebellum into seven groups, i. e., (1) cysts similar to those in my case, which will be discussed later; (2) cysts accompanying new growths; (3) simple, or serous, cysts; (4) blood cysts, that is, apoplexies; (5) cysts from pressure or embolism; (6) dermoid cysts; (7) parasitic cysts. He quotes the case of Virchow, in which there was a cystic distension of the diverticulum of the fourth ventricle, and quotes a similar case by Clarus.

In Virchow's case[7] there was a partial dilatation of the fourth ventricle, which extended laterally, and sent out prolongations on each side, between the cord and the cerebellum, at which angle a cherry-sized cyst was found, compressing the facial nerve. He spoke of it as a hydrocele of the fourth ventricle.

This case undoubtedly is similar to mine, as was also the one described by v. Recklinghausen,[8] in which a bilateral cyst which communicated with the dilated fourth ventricle was found. An opening three millimeters in length was found behind the lateral angle of the floor of the fourth ventricle, leading directly into the sac on either side. The lateral ventricles were moderately distended and the ependyma was thickened. The wall of this cyst was somewhat thicker than the pia of the pons, which was continuous with the wall of the cyst.

J. Bland Sutton[9] cited the cases of Virchow and v. Recklinghausen, and calls attention to the origin of such cysts. He noted particularly that the cavity of the fourth ventricle is extended laterally by two tubular prolongations, or lateral recesses, which open into the subarachnoid space on each side. Key and Retzius were the first to call attention to this, and Sutton refers to the result of obstruction of these recesses, i. e., dilatations of the obstructed passages and the production of cysts.

Other than these brief reports, I am unable to find any reference to this condition in the literature. I believe, however, that these apparent cysts may readily be overlooked, as they are apt to collapse when the cerebrospinal fluid escapes at the time of the autopsy.

The cause of the cysts in my case I believe to be, probably, the closure of the foramina of Majendie and Luschka, which caused an accumulation of cerebrospinal fluid in the ventricles of the brain, and, as a result, the pia arachnoid covering the free borders of the lateral recesses of the fourth ventricle as well as the recesses themselves was distended by the excess of cerebrospinal fluid in the form of a cyst on each side.

The association of syringomyelia and hydrocephalus has been noted a number of times in the literature. Schlesinger[10] cites a number of such instances, and Hinsdale, in 150 cases of syringomyelia collected from the literature, found fifteen cases of hydrocephalus. Schlesinger looks on the significance of this process in syringomyelia as two-fold. He believes that it explains in some cases the general brain symptoms of paralysis of the cranial nerves, which are frequently attributed to syringomyelia; and that the existing hydrocephalus causes sudden death in not a few cases of syringomyelia by reason of an exacerbation of the process.

I wish to thank Dr. F. Jacobs for the opportunity of reporting this case.

1732 Pine Street.

ABSTRACT OF DISCUSSION.

DR. ARTHUR W. FAIRBANKS, Boston: The occurrence of cerebellar symptoms in cases of hydrocephalus is not so very uncommon. Few such cases have, however, been reported. In such a case we have to consider whether such symptoms are the effect of the hydrocephalus or merely phenomena of a pathologic process, of which the hydrocephalus itself is merely one phenomenon. We are usually aided in deciding this point by the fact that in the first instance these cerebellar phenomena occur after the hydrocephalus has been existent some time, while in the second instance these phenomena either antedate the hydrocephalus or occur early in its course before its symptoms have become extremely marked. When secondary to hydrocephalus, cerebellar symptoms are due to the profound disturbances produced by the effect of greatly increased intracranial pressure on the functional activity of the cerebellum, the cerebello-pontile, and the cerebello-cerebral tracts, and the pons. This disturbance is in part due to effect of direct pressure, in part to circulatory disturbances secondary to the pressure, and ultimately to secondary degeneration of these tracts and cells, produced by long-continued high intracranial pressure. The direct pressure of hydrocephalus may so press down the cerebellum that its inferior surface may be found deeply indented by the edge of the foramen magnum, and occasionally actually deformed by such pressure. When not secondary but merely an associated symptom, this cerebellar disturbance may be due to the same condition that is responsible for the hydrocephalus. The most common cause of such occurrence is a new growth of the cerebellum or pons, which by virtue of its location causes the phenomena of cerebello-pontile disease, and by mechanical obstruction of the aqueduct of Sylvius, the foramen of Majendie or the foramina

5. Schmidt's Jahrb. 1889, No. 263, p. 137.
6. Mitthellung. a. d. Grenzgeb. d. Med. u. Chir., Jena, 1906, xvi, 745.
7. Path. des Tumeurs, 1867, p. 180.
8. Virchow's Arch., 1864, No. 30.
9. Brain, 1886, 1887, No. 9, p. 352.
10. Die Syringomyelia, 1902, p. 383.

of Luschka, or the venous return flow through the veins of Galen, produces also hydrocephalus, with all its characteristic phenomena, in one and the same case.

Under such circumstances the cerebellar phenomena are usually the initial symptoms. We must remember, however, that cerebellar phenomena are not so conspicuous in the infant as in the older child, whereas, owing to the elasticity of the cranium, enlargement of the head becomes early conspicuous. Therefore, the early occurrence of cerebellar phenomena with enlarging head, in an infant, should always arouse more suspicion of actual cerebellar or pontile disease than in a child whose cranium is rigid and unyielding, and, therefore, the sooner subject to the secondary results of increasing intracranial pressure produced by hydrocephalus. I have in mind several such cases in very young children. In one child in particular, in whom the trouble began before the closure of the fontanelle, and from whose cranial cavity I afterward removed an enormous tumor of the vermiform process, the ultimate cause of the hydrocephalus was overlooked by two or three able men, the slight cerebellar symptoms not having been noticed by them. The presence of optic neuritis is of much help in these cases in infancy, and when present almost always points to tumor at this period of life. In older children, however, optic neuritis, while always a suspicious sign, is not quite so surely evidence of tumor, for it is sometimes seen in primary hydrocephalus, though rarely. Optic atrophy, on the other hand, is common enough, both in primary hydrocephalus and in the late stages of tumor, and is therefore of no differential value. Hydrocephalus may occur with cerebellar symptoms in cases of general cerebello-cerebral or cerebello-spinal sclerosis and atrophy, as in certain cases of cerebellar ataxia. Interesting in connection is the occurrence, in Dr. Rhein's case, of syringomyelia. In a number of instances of cerebellar ataxia, cavities and defects in the spinal cord have been reported. At a previous meeting of this Section I showed some lantern slides of this condition. These cases are often associated with a defect in the gray matter of the cord in the region of Clarke's column, where originate the fibers of the direct cerebellar tract. In several of these cases a hydrocephalus was also present.

ERYTHEMA FIGURATUM PERSTANS.*

GROVER WILLIAM WENDE, M.D.
Clinical Professor of Dermatology, University of Buffalo.
BUFFALO, N. Y.

In 1905 I read a paper before the American Dermatological Association at New York City on "Erythema Perstans Involving Circinate Lesions," with reports of two cases. In that paper all varieties of persistent erythema were included, some of which had been described previously as special diseases, each having its own pronounced characteristics. In this paper I have eliminated all save one variety. This variety presents persistent erythematous patches, which assume annular, marginate and gyrate forms, differing essentially from other varieties of erythema. A new case is now reported with a brief review of similar cases found in the literature.

REPORT OF A CASE.

History.—Emily R., aged 16, well developed, was referred to me in July, 1906, on account of a peculiar skin eruption, covering the entire body, which had existed since birth. Her mother, father, older sister and younger brother were all healthy and strong; there was no history of syphilis, congenital or otherwise. The mother was not aware of the existence of a like skin condition in any member of the family on either side. This condition of the skin made its appearance soon after birth, commencing as an unusually red and scaly condition of the skin, which was very sensitive, smarting and burning when bathing. It had no apparent relation to infantile eczema. This condition continued until the patient was about five years old, when the inflamed surface began to show oval, red patches, which, disappearing, left rings and irregular figures, save where the skin was normal. The subjective sensations now began to increase. At first the eruption appeared and disappeared rapidly, and there were intervals when for short periods the body was quite clear. During the last two years it had never been entirely free from the eruption. The skin manifestations had existed only occasionally on the palms of the hands and the soles of the feet, in the form of a red spot which never became scaly and disappeared in a few days. Five years ago most of the lesions on the body were subject to a discharge, which ran its course in a few days, ending in the formation of a crust, which soon fell off, leaving a dark pigmentation. This complication, probably, was independent of the original condition. The patient stated that, after sitting, the clothing would adhere to the skin, caused by a discharge from the affected parts, accompanied by pain and burning, probably due to pressure. This condition would arise during walking, undoubtedly the result of chafing. The face often showed lesions of the same character as those on the body. About six years ago the mother noticed the gradual disappearance of the facial redness. This condition was followed by an entirely different manifestation, beginning on the middle portion of the face, which was represented by a number of small, hard, yellow lesions the size of a pin-head to a pea, which gradually increased in dimensions and number until all portions of the face were invaded. The patient stated that her bowels had never been regular; that pain often followed eating. At night she was annoyed by skin sensations and was often disturbed by dreams.

Examination (August 1, 1906).—The body was in excellent nutrition; internal organs apparently normal; urine normal. At a slight elevation above the level of the skin were erythematous lesions, circinate, annular, gyrate or distinctly serpiginous, discrete or confluent, occupying the back and front of the thorax. The abdomen, the arms to the wrists and the legs to the ankles were covered with these lesions; hands and feet were free. The scalp showed only a slight desquamation. The size of the single efflorescences varied in diameter from a quarter of an inch, or less, to three inches. A small lesion was often found at the periphery of a larger one. The single lesions had a well-defined outline, generally oval or oblong. The ring lesions were covered with scales, except at the sharply defined, hyperemic, free margin. The center was pigmented, varying according to the size and age of the lesions, and the surface was covered with the finest scales. The smaller-sized lesions showed a similar condition; they were on the level of the normal skin, and were of a bright red color, which disappeared on pressure; scales were found only on lesions that had attained the size of a large pea. No scratch-marks were present.

Further Course.—The old efflorescences followed their regular course. At the same time a new lesion appeared on the chest, which was kept under observation, and quickly developed to a quarter of an inch in diameter. This lesion was bright red, with a darker border. Forty-eight hours later, its size had increased to three-quarters of an inch, without change, except at the center, where it began to disappear. The patient complained of local soreness. On the face there was present a different lesion, consisting of yellow, slightly translucent, symmetrical papules, varying in size from a millet-seed to a pea, raised well above the surface, generally isolated, but, in rare instances, appearing in clusters; these were most numerous about the nose, and extended gradually over the cheeks in the direction of the ears. This condition agreed in all essential points with the picture of adenoma sebaceum, and was so diagnosed.

Treatment (Feb. 1, 1898).—Arsenic, thyroid extract and other remedies were tried during the past eighteen months, without benefit. *X*-ray treatment was kept up for about eight months, without favorable effect. The adenoma sebaceum was removed by electrolysis, with permanent relief. The patient, an intelligent girl, wrote me under the above date: "The

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-ninth Annual Session, held in Chicago, June, 1908.

condition of the skin is just the same as it was when I consulted you, not showing the slightest degree of improvement." In June, 1907, she suffered from an attack of colitis, which so affected her general condition that she was obliged to stay out of school until the first of February, 1908.

Histologic Examination.—For this a fragment of one of the circles was chosen. The excised lesion was red and smooth. The tissue was hardened in alcohol, cut in paraffin, and the usual stains employed. In the pars papillaris of the corium the most noticeable change was a well-marked infiltration of round plasma and connective tissue cells, especially located around the blood-vessels. There was a dilatation of the superficial capillaries and edema of the fibrous bundles, causing the almost complete disappearance of the papillary body. The infiltration extended to the subcutaneous tissue, without sharp limitation. The sebaceous and sweat glands appeared normal, although surrounded by round cell infiltration. The stratum Malpighii above the cellular infiltration showed no special changes, except that the basal layer was broken by the underlying edema with separation of the prickle cells, which were swollen in places; mitosis was also observed. Few leucocytes were found. The granular layer appeared almost normal. The stratum corneum showed a deficiency in cornification, although the scaliness must have been induced by the underlying edema. The cells adhered instead of normally desquamating. The clinical diagnosis of the face lesions as adenoma sebaceum was verified by microscopic examination. The lesions were entirely made up of sebaceous gland tissue, agreeing in the arrangement of cells with the normal gland; in the glandular arrangement, bi-, tri-, and even quadri-lobulation could be demonstrated; ducts could also be traced to the hair follicles.

General Condition.—There was nothing in the patient's general condition suggestive of a cause, except that intestinal disturbance was nearly always present. One can only speculate as to the possible relation of the two different skin conditions; structurally there was a distinct difference. It may be that both were due to errors of development, involving not alone the sebaceous glands but the whole skin.

HISTORICAL CONSIDERATIONS.

Before presenting conclusions relating to this subject, I shall give an abstract of a number of cases, chiefly recorded in the English and American literature, as follows:

Bazin, Paris, in a text-book published in 1862, presented the view that certain rare forms of erythema may be of long duration, differing in configuration and lasting for months and years.

The two principal French dermatologic journals are comparatively free from descriptions of unusual forms of erythema resembling the one under consideration. There are many instances recorded in the *British Journal of Dermatology* of a variety of erythema perstans of the face and of the back of the hands, and often showing ring-shaped lesions in the regions usually invaded by lupus erythematosus. But I do not associate it with the class under discussion. Whether such cases in general represent an early stage of lupus erythematosus, or are distinct, it is difficult to determine, since certain of these cases are recorded as beginning with erythema perstans and ending as lupus erythematosus. For the purpose of close comparison, reference is made only to cases presenting a striking resemblance to my own, or to others more or less closely allied to it.

Fox[1] reports two cases of erythema gyratum perstans in the older members of a family who had the disease from early childhood. The condition began as papules, accompanied by intense itching, quickly extending, so that in a few hours a circular red area was noted, covered with scales, or, at times only, fringed at the border with conspicuous desquamation. The redness of the center soon subsided. The erythematous border was narrow and only slightly raised. The rings enlarged to the size of the palm of the hand, coalescing with other similar ones and forming gyrate, festooned figures. Both patients had recurrent outbreaks of this condition without fever. The skin was never absolutely free between attacks; usually about three severe outbreaks, with many minor ones, occurred in the course of a year. Fox associates the outbreaks with changes in temperature, as the disease was less intense during the winter. He had one patient under observation until he arrived at the age of 29, and considered the condition as unique. He stated that it reminded him of erythema multiforme,

Dr. Wende's case of erythema figuratum perstans.

but did not really belong to that class. Various forms of treatment were used without favorable result.

Lustgarten, under the title of "Erythema Papulosum vel Urticatum, Figuratum, Perstans et Chronicum,"[2] presented a case before the New York Dermatological Society. The patient was 21, and had been kicked by a horse fifty days previous to the oncoming of an eruption ushered in by intestinal disturbances. It first appeared on his body and gradually extended to the extremities. The lesions were annular and gyrated, with elevated borders, associated with pigmented skin. Weeks and months before they disappeared new patches were constantly added. Lustgarten considered the condition as a reflex neurosis of traumatic origin.

1. International Atlas of Rare Skin Diseases, 1891, Part V.

2. Jour. Cutan. Dis., vol. xi, p. 110.

Finney,[3] under the title, "erythema marginatum perstans," records a case in a patient aged 21, whose general health was good, with the exception of indigestion, presenting an erythematous eruption made up of pinkish-red, elevated lesions, linear, curved, segmentary or erythematous areas occupying the unexposed portions of the body. The raised areas were pigmented and covered by the finest possible scales. The ring forms were non-scaly. The glands were enlarged. The disease varied according to temperature, being especially affected by cold. The eruption was itchy. The inception of the disease was accompanied by constitutional symptoms; during the further course of the skin manifestations there were no febrile disturbances. Finney regarded the case as a variety of erythema multiforme.

Arning[4] reported a case of erythema perstans pseudoleprosum which undoubtedly belongs to this class, although it involved a much slower process. The patient was a young woman who suffered from functional nervous conditions. The slowness of the development was remarkable, the lesions attaining only the size of a dollar in four months, being most pronounced at the border. The greater part of the anterior surface of the tibia was covered with a coalescent lesion. Its duration was over eight months. The patches also developed on other parts of the body. Arning said that the appearance of the lesion corresponded to the incipient stage of leprosy, but that the latter disease could be absolutely excluded.

Wende[5] reported two cases of erythema perstans presenting circinate lesions.

CASE 1.—This was that of a blacksmith, aged 28, who enjoyed the best of health. The course of the disease covered four and a half years. The eruption varied, at times covering the entire body and at other times completely disappearing. Four fresh outbreaks occurred during a single year. The lesions varied in size from the diameter of a pea to three inches, and were of a violet-red color. In the larger lesions the edges were well formed and were made up of rings, or segments, resulting in gyrate or serpiginous figures of varying sizes, the largest reaching a diameter of four inches. The surface was faintly pigmented, rough, and covered with scales. The only remedy that appeared to influence the eruption was chrysarobin, externally applied, but the lesions promptly returned on its discontinuance.

CASE 2.—The patient in this case was aged 38; the duration of the disease four months. The lesion began as a papule which sometimes extended peripherally, forming a patch the center of which gradually faded, leaving a circular or gyrate outline, varying in size from that of a papule to about six inches in diameter. The gyrate lesions were elevated at the border, slightly uneven, varying in color from a livid to a bright red, and gradually extending until they covered the greater portion of the body. The edge of the areas developed slowly. Itching was present at times, occasionally intense and limited to certain portions of the body. At times evanescent lesions, resembling urticaria, appeared. Treatment proved of little value. Histopathologically there was superficial inflammation, showing, in particular, dilatation of blood vessels, infiltration of cells and edema.

In a discussion following the report of Wende's cases before the American Dermatological Association, Fordyce reported two similar cases, illustrated by stereopticon views and photographs. One of the patients showed lesions limited to the back; in the other they were confined to the arms and thighs; the duration in one case was six months, in the other a year. Fordyce regarded the condition as dependent on a vasomotor paresis.

In the same discussion Schamberg showed a photograph of a case of four months' duration in a young man, described as persistent annular erythema of the thighs and arms, which had responded to treatment by chrysarobin.

Winfield also described a case which he considered erythema multiforme perstans,[6] showing erythematous patches varying in size, the largest several inches in diameter, and distinctly annular and raised. There were very few circinate lesions. The smaller ones were discoid.

Corlett, at the thirteenth annual meeting of the American Dermatological Association, June, 1906, showed a patient whose case he considered as one of erythema figuratum perstans. This case was remarkable, possessing many features characteristic of the disease under discussion. The patient was a girl, 21 years old, with peculiar linear and gyrate figures covering almost the entire body, which would fade and then recur. A feature in Corlett's case not observed in others was the occurrence of rings within rings, following the lines of evolution established by the first. The only other case showing the same peculiarity is that described by Adamson.

Adamson[7] mentions a case of ringed eruption before the Dermatological Society of London, that of a boy aged 5, otherwise in good health, and who had been under observation for nine months. The eruption consisted of symmetrical rings on the outside of the arms and thighs, from half an inch to three inches in diameter, which faded, then became more pronounced, and at times entirely disappeared. The rings began as red, slightly-raised, erythematous spots, which extended peripherally, fading in the center so that circinate bands were formed. "The outer half of the band—the advancing margin—remained smooth, red and slightly raised, while the inner half was scaly and desquamating." Adamson considered the eruption as a form of erythema multiforme exudativum.

In the discussion following Adamson's report Fox referred to his two well-known typical cases[8] occurring in a single family.

Adamson[9] has recorded another case of circinate eruption which had been diagnosed in India as "Dhobie itch." The disease had appeared nine years previously while the patient was acting as an army captain in India. Adamson described the condition as showing circinate lesions, varying in diameter from two to eight inches, with an outer advancing margin, slightly raised, pinkish, smooth and free from scales. Many of the lesions consisted of concentric rings. Itching was a feature. Ringworm was excluded. Adamson observed that there were many features which corresponded to an example of persistent circinate erythema occurring in a boy of 5, which he showed before the dermatologic section of the Royal Society of Medicine, and again at a subsequent meeting, fourteen months later, before the same society.[10] The doctor compared the case that occurred in his patient (the boy of 5) with the two cases recorded by Fox and the one reported by himself[9] relating to the army captain from India. The present case

3. Med. Press, Jan. 21, 1903, p. 51.
4. Arch. f. Dermatol. u. Syphilis, May, 1898, p. 11.
5. Jour. Cutan. Dis., 1906, xxiv, p. 241.
6. A photograph of this can be found in Pusey's Principles and Practice of Dermatology.
7. Brit. Jour. Dermat., 1906, xviii, p. 402.
8. International Atlas, v, Plate xvi, 1891.
9. Brit. Jour. Dermat., June, 1907, p. 198.
10. Brit. Jour. Dermat., December, 1907, p. 417.

was under his observation for twelve months. The eruption disappeared either spontaneously or under the influence of salicin.

CONCLUSIONS.

1. Such cases as are considered in this paper are few in number, but are sufficiently characteristic to be described as a distinct variety under the title of "erythema figuratum perstans." Some of the cases possess anomalous features, suggesting a type of erythema multiforme, yet not sufficiently distinctive to place them in that group.

2. The disease under consideration begins with scattered and isolated papules, which tend to fade at the center while extending peripherally, thus forming circinate erythematous outlines. The outer half of the advancing margin is smooth and slightly raised, the inner edge scaly and desquamating—a marked feature. The surface over which the disease has traveled is sometimes slightly scaly and pigmented. The larger lesions vary in size from a 25-cent piece to the palm of the hand—occasionally larger. The rings assume circinate, annular, discrete, confluent, gyrate or zigzag forms. In certain instances the lesions, whether evanescent or of long duration, do not develop the ring form. Two observations have been made in which the lesions formed within the area occupied by the disease followed the lines of evolution established by the first. Subjective sensations may or may not be felt.

3. In these cases, clinically considered, the erythema presents a peculiar type, different from any other form. This difference is further confirmed by the inflammatory character of the lesion, with an absence of pronounced infiltration in the fresh foci. The arrangement of the skin lesions constitutes the most important clinical feature.

4. The rate of the development of the lesions of erythema figuratum perstans varies widely. In some instances the ring lesions extend as much as a half-inch in a couple of hours, while in others the same growth requires an indefinite period. Exacerbations vary with the case, sometimes occurring three or four times a year, or oftener. As a rule, the body does not entirely clear up during the intervals. The outbreaks are in some cases said to be influenced by change in temperature.

5. There is no special sex or age predisposition. The disease asserts itself in earliest childhood as well as later in life. In rare instances it begins at birth and may be regarded as congenital. The patients are generally in good health; in a few instances the disease is reported to begin with constitutional disturbances. The etiology of this peculiar skin affection is meager and unsatisfactory and necessitates a careful study from a purely medical standpoint. It is fair to assume that the manifestations in the alimentary tract indicate the presence of an irritant circulating in the blood which, acting on the cutaneous vessels, produces this peculiar result.

6. In erythema multiforme there are usually more pronounced constitutional disturbances. The concentric rings in erythema multiforme show variegated colors and have special clinical varieties, such as erythema iris, erythema tuberculatum and erythema nodosum. The annular variety of erythema multiforme presents an entirely different appearance, is more acute, more deeply infiltrated, and its involution and evolution are entirely different from erythema figuratum perstans. The distribution of erythema multiforme may be general or local, confined even to the mucous membrane of the eye, tongue or mouth. It is often limited to one or two regions, but, whatever parts are involved, the backs of the hands seldom escape, therein differing from the persistent form. The duration of erythema multiforme is from two to four weeks, although it may last much longer.

7. Only a few cases have been studied microscopically. The pathology is that of a superficial inflammation, characterized by dilatation of blood vessels, edema and infiltration of round, plasma and connective tissue cells, especially about the blood vessels, sebaceous and sweat glands. The epidermis shows edema and defect in the process of cornification.

8. No method of treatment has proved permanently curative. The eruption can often be removed by external applications of chrysarobin, but its return is certain. The *x*-ray has been used in one case over a long period without benefit. Internal remedies have proved useless.

ABSTRACT OF DISCUSSION.

DR. FRANK H. MONTGOMERY, Chicago: The grouping of erythema that Dr. Wende has given us in his paper is based on special clinical features. From an etiologic standpoint, however, I question whether such sharp lines can be drawn between these forms of erythema, on one side, and erythema multiforme and lupus erythematosus, on the other side. In connection with this group of eruptions, we have to consider both the toxin and the tissues. We have, for example, the toxin of an acute intestinal catarrh, acting for short periods of time on tissues of ordinary or special susceptibility, and producing erythema multiforme. Then, again, we have a more persistent action of less intense toxin and producing a more persistent erythema. Would Dr. Wende attempt to separate these forms absolutely on etiologic and pathologic grounds, or is it not at present a very convenient and desirable clinical group?

DR. GROVER W. WENDE, Buffalo: I should be inclined to separate the condition described in my paper from erythema multiforme and to consider it as distinct. It is true that the little we know about the etiology corresponds with that of erythema multiforme; nevertheless the same cause or causes may be taken into consideration with many dermatoses that depend on intestinal derangements. The clinical picture is entirely different, not alone in the evolution and involution of the lesions, but also as to the locality that is usually invaded. In erythema multiforme the backs of the hands and the face are the parts usually invaded. In the cases under consideration there was no special tendency for the disease to limit itself to these localities. It is true that there is a persistent form of erythema multiforme, but it is usually limited to the locations mentioned, and it may be, as often considered, the forerunner of lupus erythematosus.

VOLUNTARY UNILATERAL NYSTAGMUS. WITH REPORT OF A CASE.*

WALTER L. PYLE, A.M., M.D.
PHILADELPHIA.

The case herewith recorded is one of extreme interest, in that it exhibits a combination of the rare anomalies of unilateral and voluntary nystagmus. Either condition alone is sufficiently infrequent to be worthy of extended report.

Patient.—A young woman, aged 22, in excellent physical condition, and of average size and proportions, consulted me for relief from frontal and sick headaches, which had not responded to extensive general medical and neurologic treatment.

Examination.—There was well-marked, chronic catarrhal

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

conjunctivitis in the upper and lower eyelids of both eyes, with a troublesome edema of the left eyelids. There was also complaint of pain in the left eye, particularly in close work. The patient had never worn glasses, and until the last ten or twelve months had experienced no inconvenience in her visual labors. In fact, she had been remarkably free from ocular disturbances. There had never been any association of ocular affection with her headaches. It was only when other means had been exhausted that as a last resort she was advised to apply for ocular examination. Under homatropin cycloplegia, I found a small amount of compound hyperopic astigmatism at horizontal axes, equal in amount in both eyes. Both with and without optical correction, the visual acuity was normal. There was no heterophoria or other disturbance of the ocular musculature. In the course of examination, I noted a sudden unilateral convergence of the left eye, with subsequent rapid oscillation for about 30 seconds. In a few minutes this recurred, which circumstance determined me to make guarded inquiry into the phenomenon. I soon found that the oscillations could be inaugurated voluntarily and as promptly checked. Although the patient disclaimed any knowledge of her ability to effect these maneuvers, she stated that she had never, for purposes of exhibition or self-experiment, produced the nystagmus. However, she exhibited no surprise at my demonstration of her extraordinary ability in this direction, which would lead to the natural inference that she was fully conscious of her power. Repeated experiments failed to show any such control of the right eye. The family history was good, and there could be obtained no records of any noteworthy ocular affection in two generations, with particular reference to any disturbance of the extraocular muscles. She could not remember any case of strabismus in the family.

Treatment.—The constant use of proper glasses was followed by prompt and complete relief from all the asthenopic reflex symptoms, and when the patient left me, a month later, she was quite satisfied with her ophthalmic experience.

Remarks.—A year later I directed a letter to the address that she had given me, but received no reply, and hence am not able to record the after-history. I am in hopes of discovering her whereabouts, however, and in such case will publish a supplementary note to these observations. During her last visit, at intervals of about 5 minutes, she three times gave a demonstration of her extraordinary faculty and seemed to effect the oscillations with as much ease as before. The only requisite seemed to be the act of convergence, which, however, did not necessarily have to be extreme. The oscillations could be easily produced while the eyes were fixed on type at the ordinary reading distance.

UNILATERAL NYSTAGMUS.

Although unilateral nystagmus is of rare occurrence, a number of cases are recorded in modern ophthalmic literature. Alexander Duane,[1] in a discussion before the New York Academy of Medicine, March 20, 1905, classifies the anomalous types of nystagmus under the following headings:

1. *Disjunctive Nystagmus.*—The two eyes move, not in parallel directions, but alternately and away from each other. The movements are symmetrical and equal in the two eyes.

2. *Dissociated Nystagmus.*—The movements of the two eyes are unsymmetrical and unrelated, one either moving much faster and further than the other, or moving in a totally different way.

3. *Unilateral Nystagmus.*—He regards this as a variety of the second form. He also refers to circumduction nystagmus as an extremely rare form of the affection.

In common with Neustätter, Schapringer, Spicer and others, Duane believes that most cases of unilateral nystagmus are really of the bilateral type, the movement of the supposedly quiet eye being very minute, and thus escaping detection. In this connection it should be noted that in many instances the lesser forms of nystagmus are not made frankly manifest until an ophthalmoscopic examination is attempted, or the eyes are tested in extreme rotations.

Alfred Graefe[2] mentions a curious case of vertical nystagmus in one eye and horizontal nystagmus in the other, which at first sight might have been considered unilateral or alternating nystagmus. He ingeniously demonstrated the type of movements by the shape of the corneal images of a candle flame—in the horizontal form the image was broadened; in the rotary form, it was enlarged in all directions.

Duane states, however, that he has seen but two undoubted cases of unilateral nystagmus. He also records one case of unilateral rotary nystagmus, in which, however, there later developed bilateral movements. Simon records one case in which at first the nystagmus was unilateral and mixed (vertical and rotary), but subsequently became bilateral and horizontal. It is of interest to note that a nystagmus originally bilateral may become unilateral. According to Schapringer, in spasmus nutans the nystagmus may disappear in one eye only. Again, according to Simon, bilateral nystagmus due to bilateral corneal opacities may disappear from the eye which clears first. He reports two cases in which infantile unilateral nystagmus was caused by unilateral corneal opacities. In the case under discussion, the nystagmus was originally bilateral and disappeared, first in one eye, and then in the other as the respective cornea cleared. It is worthy of mention, however, that nystagmus seldom occurs in cases of unilateral amblyopia, strabismus being the usual consequent disturbance of the musculature. Heimann mentions the occurrence of unilateral nystagmus in an amblyopic strabismic eye; but, according to Duane, such occurrence should be recorded as an acquired optical nystagmus rather than one infantile in origin. According to A. Graefe, in some of the cases of nystagmus, infantile in origin, without demonstrable causative ocular lesion, the oscillation may be attributed to a congenital retinal hemorrhage, which subsequently cleared.

Cases of unilateral nystagmus have been reported by Neustätter, Schapringer, Krause, Heiman, Spicer, Duane, von Reuss, Eversbusch, Bouchaud, Norrie, R. Sachs, Nagle, Oppenheimer, Weber, Schwarz, Simon, Nettleship, Soelberg Wells, Fuchs, Noyes, and A. Graefe. Of 52 cases collected by Duane, 34 were vertical, 11 horizontal, 5 rotary, and 2 mixed. In none of the cases reported, however, was the condition of voluntary nystagmus mentioned.

Duane points out three varieties of tremor of ocular movements: 1. Searching movements. 2. Pseudonystagmus, or jerking movements, which he says are not infrequently unilateral, particularly if the affected eye has the relatively weaker muscles. 3. True nystagmus, in which the eyes make a series of very regular, short, quick oscillations about a central point.

Unilateral nystagmus, he says, may be associated in early life with spasmus nutans, or unilateral opacity of the media. In later life, it may arise from unilateral amblyopia and unilateral opacity of the media, unilateral astigmatism, and nervous diseases (especially multiple sclerosis). From his observations he deduces that unilateral nystagmus differs in no essential way from bilateral nystagmus, but represents simply a form of the latter.

1. New York State Jour. of Med., 1905, v. 245.

2. Graefe und Saemisch Handbuch, vi, 1.

Nettleship[3] mentions three brothers (children), all of whom exhibited unilateral nystagmus; two were subject to "fits" and were strabismic. He reports another case of unilateral nystagmus in an infant, with rhythmic movements of the head and corresponding arm. He observes that this type of nystagmus, and associated with rhythmic movements of the head and arm, is not exceedingly rare; and also that this association of epileptic convulsions and other important nervous affections is not uncommon.

Zehender[4] also describes the case of a child with unilateral nystagmus.

Related to corneal opacities as a cause of nystagmus may be mentioned astigmatism. Stevens[5] reports five cases of functional nystagmus, or, as he prefers to call it, talantropia (an oscillating), in one family; a brother, two sisters and two young cousins (a boy and girl), in all of whom there was a high degree of astigmatism. Although no such case is recorded, it is quite possible for unilateral nystagmus to be associated with high unilateral astigmatism, and I have seen, personally, a nystagmic patient in whom the oscillations in the highly astigmatic eye were much more marked than in its less ametropic fellow.

Bernheimer[6] reports a case of a hypermetropic patient in which nystagmus was produced after prolonged close work, and disappeared after the use of proper correcting lenses. I have seen similar relief follow the full correction of astigmatism in at least a half-dozen such cases. It is my custom in all cases of purely functional nystagmus, and even in cases in which there are pronounced intraocular changes, to prescribe for constant use full correcting lenses, after most careful subjective and objective examination of refractive conditions, when necessary, under complete cycloplegia. Often there follows almost immediate subsidence in the rapidity and extent of the oscillations. Even in cases of nystagmus associated with grave cerebrospinal disease, I believe such procedure advisable, but, of course, with much less hope for noticeable improvement.

VOLUNTARY NYSTAGMUS.

Inasmuch as the term nystagmus signifies an involuntary oscillation of the eyeball, it is perhaps awkward or at least illogical phraseology to speak of voluntary nystagmus. J. W. Smith[7] has suggested as a better name for this condition ophthalmodonesis, which he defines as a voluntary tremulous or oscillating movement of the eyeballs.

Mention of voluntary nystagmus is exceedingly rare in ophthalmic or neurologic literature, and in most of the related text-books little or no mention of this condition is made. Graefe believed that voluntary nystagmus could only occur in persons who were formerly the subjects of an involuntary nystagmus which had disappeared. However, I have been able to find sufficiently accurate and complete reports of cases of pure voluntary nystagmus by Benson, Lawson, J. W. Smith, W. E. Gamble, Noyes, Williams, Dodd, A. E. Davis, J. E. Colburn, Grimsdale, Ernest Clarke, and Fuchs.

A. H. Benson[8] records a case in a young woman of 24, who could cause oscillation of her eyeballs at will. The motion was very rapid, but the excursions were short. It is noted that the nystagmus was always bilateral and at no time were there involuntary oscillations. The patient was slightly hyperopic. George Lawson[9] mentions having examined a man who all his life had been able to control his eyeballs at will. In this as in the preceding case the motion was so rapid that the margins of the cornea could not be continuously defined. As in the previous case the voluntary nystagmus was always bilateral. Lawson refers to another case observed by him in the person of a former house surgeon of the Royal London Ophthalmologic Hospital. In this instance, the lateral movements were not so rapid and it was necessary for the patient to converge his eyes before the oscillation could be started. The movements were invariably bilateral and under complete volition. In 1882, J. A. Campbell[10] recorded the case of a presbyopic woman who could vibrate both eyes horizontally at will. This seems to be the first American case reported.

Ernest Clarke[11] records an unusual case of nystagmus, which, while not voluntary, is of sufficient interest for mention here. The patient was a youth of 19 who had been apprenticed to a jeweler three years before. While working at his trade, while the eyes were fixed for any object at any distance, the view was cut off from either eye by the interposition of an opaque object, horizontal nystagmus occurred in both, the oscillation being slow and jerky when the right eye was occluded and rapid and more regular when the left eye was blocked. It is also noted that extreme movement in all directions would produce nystagmus. H. B. Grimsdale[12] reported four cases in which occlusion of either eye produced nystagmus, which immediately subsided on the restoration of the binocular vision.

These cases are analogous to those reported in a paper on "Acquired Nystagmus in Occupations Other Than Coal Mining," by Simeon Snell.[13] This author has written extensively on miners' nystagmus, which he attributes to prolonged natural upward rotation rather than to insufficient illumination. In the paper under discussion he mentions the classical and interesting biographic note of Michael Angelo set forth by Condivi, which was corroborated by Vasari, the contemporaneous biographer of the celebrated decorative painter. It is authoritatively stated that during his lifetime Michael Angelo was so affected by his strained attitude in gazing up at the vaults in the Sistine Chapel, in which for many months he was engaged in the work of decorating with frescoes, that he lost for some time the power to read except when he elevated the paper above his head and raised his eyes. Further, it is stated that Michael Angelo wrote a sonnet describing the constrained attitude in which he was compelled to work and its consequent disagreeable sequels—translation of which has been made by John Addington Symonds. Symonds remarks that the autograph of this manuscript included a humorous little caricature on the margin, showing a man, with protruded stomach and head bent back, using his brush on the surface high above him. He also mentions that as far back as 1874 Nieden recorded a case of acquired nystagmus "in a plank cutter," a workman who, in standing under the tree, observes very exactly a line marked for cutting, while keeping the eyes in a strained condition and up-

3. Royal Ophth. Hosp. Reports, xi, 75.
4. Klin. Monatsblat., 1870, 112.
5. Stevens (G. T.): The Motor Apparatus of the Eyes, 1906, 439.
6. Bericht über die 29 "Versammlung der Ophthalmologischen Gesellschaft," 1901.
7. Jour. Ophth. Laryngol. and Otolog., N. Y., 1902, xiv, 308.
8. Royal Lond. Ophth. Hosp. Reports, 1880-1882, x.
9. Royal Lond. Ophth. Hosp. Reports, 1880-1882, x, 203.
10. Trans. Am. Homeo. Ophth. and Otol. Soc., 1882, vi, 70.
11. Trans. Ophth. Soc., U. K., 1895, xvi, 327.
12. Trans. Ophth. Soc., U. K., 1895, xvi, 328.
13. Trans. Ophth. Soc., U. K., xvi.

ward direction—work very similar to that done by a bottom-sawyer in England. In a letter to Snell, Nieden remarks that, although he has made investigation in many cases of painters and ceiling decorators, he has not been able to find a case of regular nystagmus, although the symptoms of muscular asthenopia were often complained of. In his paper Snell has personally collected 21 cases of acquired nystagmus occurring in different occupations, comprising 6 compositors, 2 metal rollers, a plate layer, a plank cutter, a saw maker, a sanitary tube maker, a fitter and iron founder, a worker in a "cage," 2 employés in a glass factory, a youth engaged in a confectionery warehouse, a man employed at the screens at the surface of a coal mine, a tool sharpener, and a custodian of a harness room. In all these cases the occupations necessitated unusual strain on the elevator muscles of the eyeballs, causing at first a weariness and later oscillating movements. The nystagmus in these cases, however, was less intense than in the generality of cases met in miners. Snell also refers to the headaches of the visitors of the large art galleries and sightseers in churches and large public buildings, and, although he does not report distinct nystagmus, muscular asthenopia and instability were frequently noted.

In 1896 Gamble[14] reported to the Chicago Ophthalmologic Society a case of voluntary lateral nystagmus in a German-American medical student of 24. While attending high school at about the age of 15, he first discovered that he could produce at will lateral nystagmus, which, however, was never involuntary. No difficulty was ever experienced in starting the oscillations, but they could only be continued for less than a minute. The patient was not able to produce unilateral oscillations. The nystagmus was most pronounced when the eyes were fixed on an object six or eight feet distant, directly in front, but even in making the lateral excursion it could be continued with much less rapidity. Gamble notes that the rapidity of the oscillations were as great as he had ever seen in any case of involuntary nystagmus. It was more pronounced in daylight than under artificial light. The patient had never been ill and did not suffer from headaches or eyestrain, notwithstanding the fact that he had always been a student and teacher. His refraction was:

R. + Sph. 2.00 + Cyl. 0.50, ax. 180° = 20/20.
L. + Sph. 0.25 = 20/20 +.

The media were clear, the fundus healthy, the field of vision full, and the color sense normal. The patient had never worked in the mines nor lived in a mountainous country. He had never had writers' palsy, or other profound nervous manifestation. Gamble states that the one other case similar to his that he had seen reported was that by Noyes,[15] in a patient who had acquired the oscillations after having been confined to his room for several weeks suffering with ocular disease. Noyes remarks that in his experience this case was unique. In his text-book Fuchs mentions rare instances of persons who could produce nystagmus voluntarily. Gamble refers to Noyes' case, which he had seen through the courtesy of the elder Williams, of Boston.

H. W. Dodd[16] reports a case of bilateral voluntary nystagmus in a man, an organist, of 23. The patient could produce at will conjugate lateral movements of the eyeballs. When he desired to demonstrate this faculty he would fix his head, look forward, open widely the eyelids, and, as he expressed it, "simply wish" to cause the oscillation. No great effort was entailed and only occasionally was there resultant vertigo or headache. The oscillations could be produced while looking up, down or laterally, either at a distant object or at close range, and also while under the influence of a cycloplegic. The objects looked at moved from right to left, or *vice versa*, and it may be mentioned here that only in voluntary oscillation are subjective disturbances of vision, nausea, vertigo, etc., seen. In all cases of voluntary nystagmus the oscillations can only be continued over a short period, usually in one minute. Dodd's patient possessed the remarkable faculty of being able to converge vigorously, while continuing the oscillations. The power of voluntary nystagmus was first observed at the age of 9. The family history was negative in regard to nervous or mental diseases, and the patient was particularly exempt from any nervous affection. Vision and refraction were practically normal, although there was a patch of chorioretinal degeneration in the right eye, which was of eight years' standing.

Possibly the most complete published record of a case of voluntary nystagmus is that by J. W. Smith.[1] The patient was a male student of 21 of French, Huguenot and English parentage. The family history was good, and the only remarkable ocular affection was noted in a sister of 17, who exhibited apparent convergent strabismus of the left eye in near vision, but whose eyes were in normal balance when directed at distant objects. Beyond a slight inflammation of the eyes at the age of 7 or 8, which speedily subsided under the instillation of a common eye lotion, there was no history of ocular disturbance in the patient. There was absolutely volitional rapid oscillations of both eyes simultaneously in the lateral direction or in the horizontal plane. The oscillations could be started and stopped at the patient's will. A careful subjective examination of the eyeball showed no marked disturbances of refraction, muscle balance, accommodation, fields of vision, color sense, or visual acuity. Ophthalmoscopic examination was negative. There was no malformation of the globe or orbit. The innervation of both the intrinsic and extrinsic ocular muscles appeared perfect, and the patient experienced no asthenopic symptoms, even after long-continued, close vision. The eyes oscillated only in the horizontal plane, but the motions could be produced not only in the primary position, but in the secondary positions, such as extreme convergence, extreme divergence of either eye, and looking upward and downward. The oscillations could be continued during the entire excursion of the globes (circumduction). Oscillations could be produced when the lids were closed and also when the patient looked through a 20° prism placed before either eye, with its base in any position.

It may be remarked that it is generally accepted that visual sensation influences all the various movements of the eyeball; that is, the efferent motor volitional impulses are originated or are preceded by afferent visual influences. In comment on this statement, J. W. Smith with good reason remarks it is certainly apparent in his case that the patient did not depend on visual sensation for the movements of his eyeballs, for he could produce the movements without looking out or for an object, either real or imaginary, and, indeed, could produce the movements with his eyelids closed, or in the dark, or without fixing the object. Likewise he could produce the movements of his eyeballs whether he fixed on an object at near range or in the distance. This would

14. THE JOUR. A. M. A., 1896, xxxii, 483.
15. Diseases of the Eye, 1890.
16. Trans. Ophth. Soc., U. K., 1901, xxi, 244.

seem to show the independence or volitional character of the movements, and thus by elimination, "visual sensations may be excluded as a factor or elements in the causation of the ocular movements in this particular case. Again, if this be true, efferent motor volitional impulses are not wholly dependent on those afferent." Smith believes that the oscillations in his case were dependent on efferent impulses affecting the nervous centers in control of the ocular musculature, or, perhaps, the co-ordinating centers in the corpora quadrigemina, in which case he believes that "if they are not due to visual impulses they must be connected with the kinesthetic or psychomotor cerebral cortex."

The longest period during which Smith observed the movements was thirty-five seconds. The patient stated that in producing the nystagmus there was a sensation of slight pressure on each eyeball, pushing or pressing it forward. Ordinarily, during the production of the oscillation, the palpebral fissure was abnormally wide and the upper lids a trifle unsteady, causing noticeable exophthalmos. There was never observed any change in the pupil during the oscillations. Objects viewed while the eyes were vibrating had a simultaneous movement.

Fig. 1. Eyes in normal position.

Fig. 2. Divergence of left eye.

Fig. 3. Divergence of right eye.

GOULD AND PHILLIPS' PATIENT.

At distance, objects appeared to be constantly changing their position, and at close range they doubled and blurred. When the patient vibrated his eyeballs and fixed the object, it seemed double and the images appeared to approach and recede. The oscillations could be produced in daylight or in darkness and in the presence of artificial light, with equal energy and rapidity. The amplitude of the vibration was about one millimeter and the rate of motion approximately 5 or 6 vibrations a second.

A noteworthy feature of the case was the ability of the patient to arch the right eyebrow independently of the left, or to arch the right upper brow and draw the left down at the same time. He could also close the left upper lid over the eyeball without wrinkling the forehead or the skin of the eyelids, the upper lid apparently falling gently and smoothly over the globe, while the right eye remained open. The patient could also vibrate the alæ of his nose very rapidly and move either ear. All these movements were executed while under the control of the will. I may here mention that one of the most successful and entertaining tricks of a well-known American comic opera comedian is this power to produce bizarre disassociated movements of the eyebrows. None of his stage play is more convulsively humorous than the contortions of his forehead and eyebrows (exaggerated by his "make up" to accentuate the incongruous upper facial grimaces).

Another popular comedian owes much of his successful fun-making to his ability to move one eye independently of the other. Foster remarks that "very few persons are able by direct effort of the will to move one eye independent of the other, though some, and among them one distinguished both as a physician and oculist, have acquired this power." I have seen this faculty exhibited in the person of a negro lad of about 19, a frequenter of the Dispensary of the Emergency Hospital, Washington, D. C., during my service, 15 years ago, as resident surgeon of that institution.

Dr. George M. Gould, of Philadelphia, and Dr. William L. Phillips, of Buffalo, have described an extraordinary case of voluntary unilateral divergence in a man of 32 (see illustrations). The patient not only had binocular fixation, but also binocular vision, which, however, was markedly decreased in comparison to monocular vision, likely due to persistent non-use of the binocular position. A remarkable feature of this case was the ability to keep both eyes simultaneously in focus while in the strangely dissimilar positions—one eye straight in front, and the other in extreme divergence. While reading a test-card with the fixing left eye the patient promptly recognized facial grimaces made by the examiner standing in such a position that his face could only be seen by the divergent right eye. Immediately the patient said, "I see you! You can't come that on me." Dr. Phillips also describes another similar case in a man of 60. This patient had taught himself to set type and read proof at the same time without movement of the head. He had never had noticeable diplopia.

In both of these patients the lateral field of vision, when the eyes were diverged, was 220 degrees. The other points in common in these two cases were: The anomaly had existed since birth. They were able to move their eyes in any direction, having absolute control of their external ocular muscles. They were both myopic and had about the same visual acuity under cycloplegia as with the accommodation active, and whether one or both eyes were used in the visual act. When angry they used binocular vision. They were able to converge and diverge when looking either up or down, to the right or left, showing absolutely no deficient innervation of the musculature. Their retinas

showed a similarity to the ungulates, in not having a highly developed area, which would suggest a true macula. Although light perception was more acute centrally, it was, however, quite serviceable in all parts of the retina. If it were possible to secure a careful pathologic examination of these eyes, Phillips believes that it would be found that the extraordinary ability of ocular rotations was due to absence of a well-defined macula, which fact would afford evidence in support of the opinion that the macula is absolutely necessary only for binocular vision at the near point.

J. E. Colburn, quoted by Smith, reports a case of involuntary movement in one eye in an engraver of 28. He was accustomed to use his loup before the left eye with his tools distributed to his right side. He used his graver with his left hand and could pick up any tool desired on the table near him without changing the relation of his eye to his work. He had also acquired the habit of fixing with his left eye and rotating his right in any direction required, though not so rapidly and so steadily as when the loup was in position before the left eye. As a result of these curious ocular gymnastics there was produced an attack of cyclitis in the right eye, eight years before, which had recurred three years later, and again in two years. Each attack was more protracted than the preceding. Colburn also mentions the case of a girl, aged 18, who, following an injury to her head in a runaway accident, exhibited rotary nystagmus over which she had perfect control. However, when her attention was not fixed, the oscillations were continuous and considerable.

Such power as the foregoing would indicate inhibition of one eye with volitional innervation of the other, indicating, as Smith sets forth, that the coordinating centers of the two eyes must be influenced along different paths or by different stimuli, or by cortical impulses coming from different areas. He describes a so-called "Z-tract," the fibers of which extend from the neighborhood of the precentral sulcus—the motor area for the eyes—downward between the caudate nucleus and the lenticular nucleus (probably some fibers pass through the corpora striata), thence through the thalamus to the corpora quadrigemina and to the nuclei of the third, fourth and sixth nerves. He notes that nystagmic movements have been produced by passing a probe into the region of the corpora striata and optic thalami. It is remarked that incoordinated movements of the eyeballs are never intimately connected with lesions of the upper and more peripheral parts of the brain. Cerebral hemorrhage involving the basal ganglia often produces conjugate deviation of the head and eyeballs toward the unparalyzed side. Smith also calls attention to the fact that conjugate deviation of the eyeballs occurring as a symptom of cerebral lesion in the region of the basal ganglia is usually indirect and transitory, showing a temporary disturbance only in the tract of fibers connecting the cortex with a center of the brain. The natural conclusion is that in the projection system anatomic examination seems to indicate the connection between the cortical centers of the frontal lobe and with ganglionic centers of the thalamus, and of these with the nuclei of the nerves of the ocular muscles, and later with the coordinating centers.

ABSTRACT OF DISCUSSION.

DR. M. WIENER, St. Louis, agreed with Dr. Pyle on the necessity for correcting the error of refraction in these cases of nystagmus. He said that about a year ago he had occasion to examine a lady, aged 39, with unilateral nystagmus. The left eye on being fixed was perfectly quiet, while in the right eye there was marked lateral nystagmus. The patient was myopic and astigmatic, but more in the right than in the left eye, whereas the same correction had been given for both eyes. On giving a full correction the nystagmus almost entirely disappeared.

DR. A. E. DAVIS, New York, referred to a case of a young girl 7 or 8 years of age, who could voluntarily produce a rapid horizontal nystagmus. Both eyes were involved. There was no refractive error of importance. Dr. Davis said that the patient still had this ability and she was now 17 or 18 years of age. The fundus of the eye was normal and the patient complained of no headache or other ocular symptoms.

DR. WALTER L. PYLE, Philadelphia, called attention to the fact that in spite of all efforts to concentrate and fix the eyes there was still an unconscious, but yet appreciable movement at all times. The assumptions of the older psychologists that there was a definite visual "point of regard," Dr. Pyle said, was now challenged on very convincing experimental evidence. Recently Prof. Raymond Dodge had claimed that instead of a "point" the center of visual interest was a very appreciable "area." This thesis he supported by a few very simple subjective experiments. Dr. Pyle also referred to the authentic reports of cases of voluntary iris, in one of which, by Bechterew, there is described a unilateral voluntary control of the iris. He had found at least a half dozen bilateral instances of this phenomenon in ophthalmic literature. Dr. Pyle reiterated his belief in the importance of the careful correction of refractive errors in all cases of nystagmus, even when there is associate cerebrospinal lesion.

FRACTURE OF PATELLA,

WITH SKIAGRAMS OF RESULTS OF TREATMENT BY SUTURE.*

J. M. BATCHELOR, M.D.
House Surgeon, Charity Hospital.
NEW ORLEANS.

The literature concerning fractures of the patella up to ten years ago is chiefly remarkable for the constantly changing view there represented concerning the proper treatment of the condition. The evil results of patella fractures vary from simple restriction of joint movement to complete loss of function with ankylosis. Such results, partial recovery and impaired function are dependent on two factors: First, improper coaptation of the fracture, and second, prolonged fixation of the joint with resultant atrophy of the quadriceps extensor and shrinkage of the joint capsule. The former condition being dependent on interposition of periosteal tabs, contraction of the quadriceps extensor and intra-articular hemorrhage, rendering it difficult to approximate the fragments.

As early as 1868 v. Volkman attempted to secure close apposition of the fragments by subcutaneous suture, which, with some modification, was later practiced by Kocher, Ceci, Heusner and others, with the inevitable result of impaired function or, at best, a fortuitous union. After the introduction of the antiseptic period with Lister's attempt in 1878 to wire the patella by open suture, and with the subsequent perfection of aseptic technic, surgeons the world over have finally adopted the method of open suture as being the only method of removing the mechanical hindrances before mentioned.

I have operated in the past twelve years in eleven cases. My first operation was performed in 1897 and consisted in wiring the patella with silver wire. The patient in this case was admitted to the hospital May 17, after sustaining a fracture of the patella by indirect violence. He stated that two years before, fracture of

* Read before the Orleans Parish Medical Society, July 27, 1908.

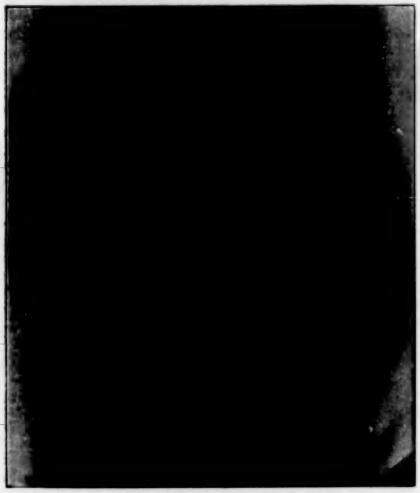

Fig. 1 (First Series).—Skiagram of fracture of patella, showing a separation of ⅝ in. Operation done under chloroform anesthesia.

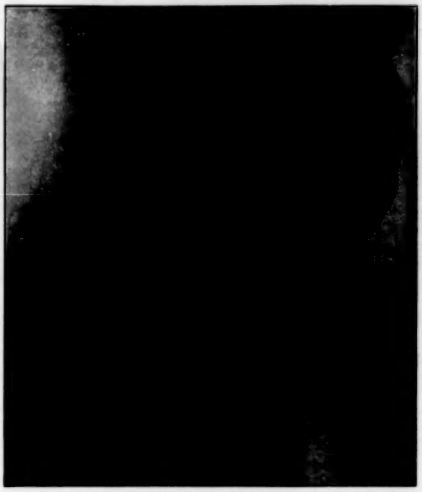

Fig. 2 (Second Series).—Skiagram of the knee joint shown in Figure 1, taken fourteen months after fracture. Bony union has occurred.

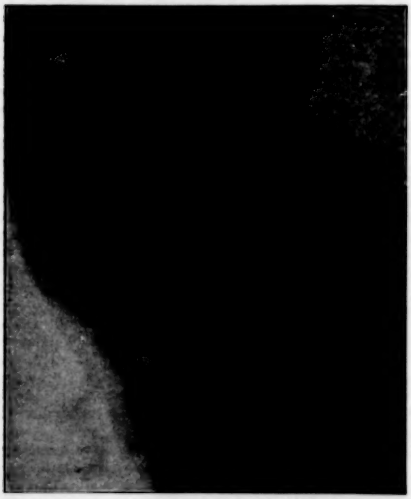

Fig. 3 (First Series).—Skiagram of fracture of patella, showing separation of bony parts. Operation under local analgesia (Schleicht).

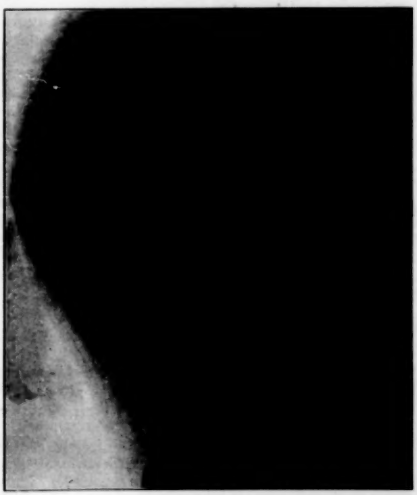

Fig. 4.—(Second Series).—Skiagram of knee joint shown in Figure 3, taken two years after fracture. Bony union complete.

the same patella had occurred and this had been treated by splint and bandaging. In this case, as in all others, with one exception, I allowed forty-eight hours to transpire before operating, so as to allow complete cessation of hemorrhage and thereby lessen the difficulty of operation.

OPERATIVE TREATMENT.

My subsequent experience in the second case, in which I operated immediately after the injury, convinced me of the advantage to be gained by a forty-eight hour wait before operation. In this second case the constant ooz-

ing of blood in the joint, rendering frequent sponging necessary, left me in some doubt as to the wisdom of closing the joint in which I had reason to believe a collection of blood would finally be left. My technic in all subsequent cases, as in the first, has been to confine the patient to bed for forty-eight hours after the injury before operating and during this time to fix the joint and apply an ice-bag. The difficulty of operation is much reduced by this wait, sponging being less necessary and much traumatism of the joint obviated.

During the entire operation it is my custom to run a 1 to 20,000 bichlorid of mercury solution through the joint, obviating the necessity for sponging and preventing sepsis. The suture has been, indifferently, catgut or kangaroo tendon except in the first case, in which the patella itself was wired with two silver wires. In every case immediate and complete closure of the joint was done and primary union resulted.

POSTOPERATIVE TREATMENT.

The postoperative treatment consisted in immobilization of the joint by a posterior gutter splint with confinement in bed for fourteen days, after which the patient was allowed to get up and walk, the leg remaining in the splint. The intra-articular pressure from weight-bearing I have found to aid greatly in overcoming stiffness of the joint and in causing resorption of adhesions that may have formed, and I believe it contributes greatly to restoration of the joint function. I have rarely found it necessary to practice passive motion for more than seven days.

In the skiagraphs (Figs. 1, 2, 3 and 4) of two of these cases, the first series (Figs. 1 and 3) were taken four weeks after the operation, and the second series (Figs. 2 and 4) were taken at periods of fourteen months and two years later, respectively. It will be seen that in each case in the first series (Figs. 1 and 3) of skiagraphs taken four weeks after operation there appears to be a separation of the fragments, in one case (Fig. 1) an apparent separation of at least three-eighths of an inch. It will be observed in the second series (Figs. 2 and 4) of skiagraphs that there is bony union in each instance. Three of the patients in these eleven cases were operated on under local analgesia (Schleich). In these eleven cases ten of the patients have perfect function of the joint, being able to flex the limb to the extreme and to mount a chair while standing close to it.

CONCLUSIONS.

My observations from the standpoint of these cases and of the skiagraphs of seven of them lead me to the following conclusions:

1. Bony union rarely takes place before thirty days.

2. Bony union is possible where there is, after suture, a separation of the fragments equal to three-eighths of an inch.

3. Whenever general anesthesia is directly contraindicated such patients may be operated on under local analgesia and bony union confidently expected.

4. The essential requirements of the operation are, first, preliminary fixation of the joint for from forty-eight to seventy-two hours to allow complete arrest of hemorrhage; second, suture of the lateral tear of the capsule, thereby restoring the reserve extensors and obviating the danger of atrophy of the quadriceps; third, absolute asepsis and immediate closure of the joint without drainage.

GENERAL PARESIS IN CHILDHOOD.*

ARTHUR WILLARD FAIRBANKS, M.D.
Assistant Physician for Diseases of the Nervous System at the Children's and City Hospitals; Instructor in Clinical Medicine, Tufts College; Visiting Physician to the Floating Hospital for Children.
BOSTON.

I wish particularly to preface this paper by the statement that my remarks apply to paresis in childhood and are based on a study of the disease at this period of life.

Paretic dementia, having its onset previous to the age of 16 years is, if one may judge from the space given to the subject in the text-books, of great rarity; and we find, in fact, that previous to the last fifteen years the paucity of cases reported in the literature seems to have justified the scanty attention accorded to the affection by the text-books.

Has this seeming infrequency been actual or only apparent? There are many factors that may explain the apparent but not actual rarity of this affection.

In the first place, we are dealing with an affection whose chief or most obvious symptoms are mental. I believe it is not an exaggeration to say that fewer medical men are conversant with the symptoms of mental disease and their significance, or inclined to give to such cases as come under their observation that inferential attention and study that they would devote to any other affection, than is the case in any other department of medicine.

Secondly, the disease is often extremely insidious in onset. There is rarely anything alarming to the average parent in the early months of the disease. The symptoms are ascribed to indifference, laziness, nervous irritability or ill temper. So gradual is the progress of the mental deterioration that the disease is usually well pronounced by the time the family physician is consulted; but even then the full import of the clinical signs and the significance of their duration may not be recognized. The pronounced clinical features of the affection, especially those of motor character, naturally more obvious to the general practitioner, are often ascribed to shock, or may be considered as the sequelæ of some preceding injury or disease. The parents are assured that the child's brain has been injured and that there is nothing to be done. The advance of the disease is so unobtrusive that the parents delay seeking special advice, and the child dies of some intercurrent disease, and the case is lost to science. In other instances the patient is committed to an institution at so late a period of the disease that, on account of the forgetfulness or indifference of the parents, or lack of thoroughness on the part of the history taker, the exact and early onset of the affection may not be apparent. I am convinced that it is a safe inference that all cases of mental disease in childhood actually antedate considerably the onset assigned by the family.

Finally, without question many cases have terminated their course in institutions, and others are at the present time inmates, that have not been and will not be reported on account of lack of interest or procrastination on the part of the medical officer or on account of the pressure of his routine work. When we consider

* Owing to lack of space, the article is here abbreviated by the omission of the report of a case. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

these facts we are justified, I think, in assuming that general paresis is somewhat more frequent in childhood than might be inferred from the literature, although without doubt a relatively rare affection.

The number of reported cases is so small that it is hardly possible to assert positively that the disease in childhood is increasing in prevalence. In the very large clinic at the Children's Hospital the affection is very rare, and no evidence of any such increase is noticeable. But it is of interest to note that in the series of which I give an analysis at the end of this paper 89 per cent. were reported within the last fifteen years and 65 per cent. within ten years. None of these children was over fourteen years when the first symptoms were noticed. If I had included the fifteen and sixteen year old patients, a very remarkable increase of cases reported within the last few years would be apparent. This is in part due, I am sure, to the very greatly increased interest in the study of the manifestations of disease in childhood, but my personal feeling is that there has actually been an increase of the disease itself, but not as yet of sufficient proportions to be noticeable in any one clinic.

The earliest apparent onset of which I am aware was in a six-year-old child reported by Marr.[1] This is so very early that I should doubt the case, had the autopsy not been obtained. As childhood advances the affection increases in frequency, slowly at first, but progressively, up to the fourteenth, fifteenth and sixteenth years, at which period by far the greater number of instances occur, or at least have that period assigned as the date of their onset. From this age onward there is a very abrupt decline in the likelihood of the occurrence of the disease for a period of several years, at the end of which time there is again an increase in its prevalence, slow and gradual, to the thirtieth year.

CLINICAL PHENOMENA OF THE AFFECTION AND THEIR VARIANCE FROM THE ADULT TYPE.

By the terms "general paresis," "paralytic dementia," "juvenile or infantile dementia," "progressive general paralysis of the insane," occurring in childhood, we mean an affection whose initial characteristic is cessation in the evolution of the intellect and deterioration of its function, and whose further course is accentuated by a progressive disintegration of the higher cerebral centers, with its resultant abnormal psychical phenomena, and by coincident disturbances in the motor and very rarely in the sensory spheres, and characterized pathologically by a meningoencephalitis with atrophy and degeneration of the parenchyma and proliferation of the neuroglia of the subjacent brain.

No one of the terms applied to this affection is really acceptable or correct, especially when applied to the affection as we see it in childhood. For, while these children are always demented, they are not invariably paralytic in the restricted interpretation of the term, and while all of them are abnormal mentally and most of them are eventually paralyzed, they are not always insane in the strict definition of that term; while the title "juvenile" or "infantile dementia" brings to mind certain defective mental conditions in children, either of congenital character or otherwise, and having nothing whatever to do with the affection which we are studying. Some term should be devised to convey to the mind the distinctive character of the affection, and until then the title, general paresis, is perhaps less objectionable than any of the others.

The characteristic clinical features of the disease in childhood are, in its onset, failing memory, depreciation of intellectual power and change of character, the first two being usually noticed in the cessation of progress at school. These symptoms are progressive and are soon associated with tremor of the face, lips, tongue or extremities, of varying extent and degree; disturbance of muscular coordination, disorders of speech, disturbances in the gait, change in size and reaction of the pupils, and exaggeration of the deep reflexes and often of the superficial as well. As the disease becomes well established, delusions, hallucinations and morbid fears not infrequently appear. As the affection progresses the mental state becomes one of apathy and depression, alternating with occasional outbursts of passion or excitement, sometimes maniacal, or, without such outbursts, it remains one of apathetic content or indifference. External impressions become superficial and transient. Even occasions of great grief or anxiety in the household bring forth no response from the child. This is often in most striking contrast to the previous affectionate and sympathetic disposition of the child. Deeper and deeper the child sinks into imbecility; it becomes more and more unsteady and tremulous; weaker and weaker on its legs; incapable of clothing or feeding or helping itself in any way; unclean and without control over the sphincters; and, finally, bedridden, more from general tremulousness and inability to initiate and control muscular movement than from definite localized paralysis. Soon after the state of bedridden helplessness is reached, contractures ensue, bedsores develop and in a condition of advanced emaciation the victim finally dies of exhaustion or intercurrent disease, occasionally with terminal convulsions.

Intercurrent in the course of the disease, general or localized epileptiform convulsions sometimes occur, and palsies of varying extent and degree are not uncommon, especially in the part either exclusively or most markedly affected by the epileptiform seizure. These palsies are more often partial than absolute. They may remain permanent or they may slowly clear up, notwithstanding the advance of the disease, in which case they usually recur sooner or later in the same part, not often in some other part of the body. Especially is this so in the local paretic conditions following epileptiform convulsions, at some subsequent recurrence of the spasm.

The sudden, frequent and transient implications of the cranial nerves, so characteristic of cerebral syphilis, do not occur in this affection, a point of considerable importance, as will be seen when we come to speak of the differential diagnosis. Cranial nerve palsy, when it occurs, usually involves some branch of the third nerve.

Optic atrophy is quite frequent, but not sufficiently so to make it a prominent feature of the symptom-complex. While usually a feature of the well-developed stage of the affection, motor disturbance may occur very early, or in rare instances may seem to usher in the disease. Tremor and incoordination are quite frequently early phenomena, and occasionally well marked paralysis or convulsions may take place early in the course of the disease, or may be obtained in the history as occurrences long preceding the apparent onset of the dementia.

1. Case 34 of the Summary.

Wherein does this disease in the child differ from the adult form? In many features, but first in a very striking particular, namely:

The male sexual predominance, so characteristic of the adult type, does not hold true in childhood. The disease is about equally divided between the sexes. Thus, of a large number of cases studied, there were a series of forty-two authentic cases, the origin of which in every case occurred before the end of the fifteenth year, that is, well within the period of childhood; and of these twenty patients were boys and twenty-two were girls.

Second. The course of the disease is somewhat longer in the child.

Third. In the infantile type, well-defined, true delusions of grandeur, expansive obsessions, are rather rare. They do, however, occur, but are then limited in range, due probably to the child's previous inexperience in and consequent ignorance of the social, political and business relations of life. Other and more common delusions are also of simple character and much more transient than in the adult, not nearly so persistent.

Fourth. The emotional element is the essential and predominant feature of the infantile type. Causeless excitement, unprovoked laughter or weeping, screaming, and morbid fears interrupt the apathetic contentment. Excitement is prone to occur or be especially marked at night.

There is no doubt that the disease in the child is less complex and presents, as Watson says, a purer type than in later life.

SPECIAL FEATURES.

One of the most characteristic of the clinical phenomena of this affection is the muscular instability, that tremulous condition of muscular equilibrium, sometimes constant, sometimes occurring only on attempt at voluntary movement, and always greatly increased by such attempt, occurring in the face, lips, tongue or extremities mainly, but evident more or less in the body as well. With this tremor there is quite frequently, but by no means invariably, a distinct inability properly to control or to coordinate muscles or muscle groups for complex action. Both of these conditions seriously interfere not only with the action of the hands, but with the gait and the function of speech, and add to the special disturbance of the gait and speech that is peculiar to the disease.

The gait may be spastic or ataxic, as in tabes, and is occasionally distinctly staggering; but the most common characteristic, in the child, at least, is the unsteadiness of the gait. To overcome this unsteadiness, the feet and legs are placed wider apart than normally, and the child's attempts to walk often recall to mind the early efforts of the infant in learning to walk. As this condition increases in intensity, the child becomes more and more afraid to trust itself to walk alone.

The speech is tremulous, slow and often hesitant, and of monotonous character, with little or no change of inflection. It may be lisping or stammering and occasionally the speech has a somewhat explosive character, but this is not very marked or common. Syllables and words are often transposed or elided. This phenomenon is probably purely mental in origin, but many of the other peculiarities are due to difficulty in initiating the coordinate muscular action necessary for the emission of a syllable or word, or to overaction of certain muscles and insufficient action of others, involved in the function of speech. The slowing and hesitation may be due to the use of indirect paths in the brain between the auditory and visual memory centers and the motor centers for speech, necessitated by the destructive progress of the disease. Sometimes preceding or during speech there is overaction of the facial muscles, especially about the mouth, or fine twitching of these muscles occurs. Toward the end the speech usually becomes either impossible or a mere jumble of unintelligent sound.

The features are deficient in expression, and often do not respond to emotion which the child seems to feel. It is not quite accurate to describe them as expressionless. In some cases there is a peculiar suggestion of anxiety in the countenance, which is sometimes accentuated by the furrowed condition of the forehead, which may by itself alone give a distinctly scowling cast to the expression, very different from the blank stolidity and complete facial inaction seen almost invariably in the adult. The pupils are usually dilated, and as a rule unequal, and always sluggish or inactive to light, and, not so very infrequently, also to accommodation. They are rarely both contracted, although, somewhat more commonly, one may be so for a time, in the earlier stages of the disease. Occasionally the light reflex is lost on one side before it fails in the other eye. The deep reflexes are always exaggerated in the uncomplicated case. When in such cases they are not so found, it is because of lack of relaxation of voluntary muscular tension, or on account of rigid muscular contracture. Clonus and the Babinski sign are occasionally to be elicited, but are not essential or even common features of the symptom-complex. The superficial reflexes are also sometimes increased. The Romberg phenomenon does not occur in the affection, at least in the child. There is in some instances a marked increase of muscular irritability.

Sensory disturbance is not a feature often present, although some diminution in reaction to pain may occasionally occur, probably from mental obtuseness rather than from actual anesthesia. Headache is not sufficiently frequent to be considered as either an essential or common phenomenon. When it occurs, however, it may be a cause of bitter complaints.

MENTAL STATE.

In the early stage of the disease failing memory and alteration of character usually constitute the initial signs of the impending disintegration of the mind. A child previously affectionate, sympathetic and tractable, companionable with its fellows, fond of its work and its play, and more and more interested in its increasing complexity, incident to the evolution of childhood, becomes less demonstrative, less interested in and more and more indifferent to its environment. External events fail to excite the accustomed attention, and irritability and resentment take the place of affection, sympathy and docility. Little acts of affection or courtesy once practiced are less and less evident, and childish duties learned and once well performed are neglected and forgotten, and trivial incidents of daily life cause irritative reaction out of proportion to their importance. The necessity of mutual compromise and concessions to the requirements and possibilities of its environment, formerly understood by the child, is now disregarded. New impressions make but superficial indentation on the mind, and such impressions are soon lost, or, if

retained for a time, are wrongly interpreted, and not correlated with other impressions in proper ratio.

It is the power of ideation, the logical association of ideas based on experience and on relation with the external world, the proper sense of proportion, the judgment, the higher inhibitive power, the balance of the mind, that is overthrown. The more extensive the previously acquired perceptions have been, the greater and more conspicuous is the wreck of their proper association or correlation with one another. Consequently the brighter the previous intellect of the child the more striking is its early unbalancing and subsequent overthrow.

Delusions and hallucinations are comparatively frequent, but they are of simpler type than those of later life. The following are illustrative:

Hallucinations.—A 13-year-old girl frequently imagined some one was at the door and often ran to open it (auditory?); thought an elephant was at a corner of her bed, and pointed to what she said were men in an empty room (both visual). A 15-year-old girl thought she had money, and when convinced that she had none accused a sister of stealing it; refused food "because she couldn't swallow and all her teeth were falling out," and her father had "put a jug down her throat" and it "was still sticking there." An 11-year-old girl thought a boy told her that a little girl acquaintance was dead and sat at the window for an hour, "looking out at the coffin," although the child in question was not even ill (auditory and visual). A 15-year-old girl declared "the dear lady" appeared to her and "told her she was going to take her to heaven" (visual and auditory).

Delusions.—An 11-year-old girl thought a little boy, living across the street, was beating her. One day her mother heard her screaming in an adjoining room, "Go away with you," "Take it away," and found her pointing to a fly crawling on the table and saying it was a big dog and it frightened her. When at home she imagined that she was away. Another girl thought dogs were following her. A boy gazed for long periods into the palms of his hands and thought he was reading a newspaper. A girl was "acquainted with the queen."

Closely associated with hallucinations and delusions, and often incapable of being separated from them, are morbid fears, as in the case of the girl who constantly worried because at her first communion she "did not confess all her sins," also she "prayed too much," and the devil appeared to her and asked her "to sell her soul." These morbid fears are usually in striking contrast to the child's indifference to events of actually tragic character in its environment.

Marked delusions of grandeur and pronounced states of exaltation are very rare.

While failing memory is often one of the initial signs of the disease, there are occasional instances in which the memory for things learned by rote is long preserved to a remarkable degree. This is also mentioned by Thomson. In the case here reported, under my own observation, five months before death, at a period when all of the other signs of dementia were well marked, the boy recited "Barbara Frietchie" with only two or three mistakes, and these he recognized and corrected himself. Recognition of friends either by sight or voice is also sometimes present for a much longer period than the mental state otherwise would lead one to expect.

A striking feature of the childhood type of this disease is the cessation of sexual and physical development. Sexual growth does not occur after the onset of the affection, the sexual organs remaining infantile in type, and in the girl menstruation does not occur, or if already established it soon ceases, while the physical development advances but little beyond the point reached at the advent of the first well defined symptoms of the disease.

DURATION.

The course in children is steadily progressive. Only now and then is a case seen in which slight remissions occur, but they are brief. On the other hand, although the decline to complete dementia is progressive and relatively rapid, the demented stage itself is relatively long, so that the actual duration of the affection from onset to death averages much longer than in the adult. So decidedly is this the case that in those instances of apparently very short duration it is well to look with some doubt on the period assigned by the relatives as that of its onset. Then, also, in children of duller or slower mental caliber the disease is less apt to be recognized as early in its onset as in the brilliant mind. This in itself greatly modifies the apparent duration of individual cases. It is also probably the reason why cases in which the onset is early seem to run a longer course than those in which we are obliged to accept an apparently late period for the advent of the initial symptoms.

In an affection, the duration of which varies so very greatly, it is of no practical value to assert an average duration obtained by dividing the sum total of the years of duration by the number of cases involved. The figure so obtained tells us nothing and is misleading. What does it avail us to know that of a series of cases whose individual duration varies from one to nine years the average duration is four years? For that does not tell us whether any given case will last the maximum or the minimum of these periods. All that we can say of this disease is that it may last any period from one to nine years. Nothing more definite is possible.

DIAGNOSIS.

If the history is taken with painstaking care, with careful and skilful cross-questioning of the relatives, and our examination of the child conducted with critical thoroughness, there is but a single other disease that can be mistaken for the one we are considering, and that disease is cerebral syphilis. Even here a critical consideration of the course of the affection in all its details, of the character of the onset, course and duration of the individual phenomena, will usually enable us to differentiate the two conditions. When we remember that many of the phenomena of active syphilitic disease of the brain are due to arterial accidents and disturbances in the cerebral circulation from vascular disease, resulting in a cutting off of the blood supply to certain restricted areas of the brain, usually sudden in character and often very transient in duration, and manifested clinically by sudden, circumscribed and fleeting palsies, now here, now there, occurring and vanishing in often most eccentric manner, by vertigo and syncopal attacks, and *transient* disturbances of memory, speech and consciousness; when we remember that in those instances whose chief clinical phenomena are due to meningitis, it is a meningitis localized, or at least concentrated, at the base, with consequent involvement of the cranial nerves and resultant multiple, eccentric and often fleeting pal-

sies of these nerves; and, finally, when we bear in mind that circumscribed gummata, very rare in the child, present clinically the focal signs of intracranial tumor, we shall be saved from many an error in differential diagnosis.

The peculiar manner of onset, erratic course and often very transient character of the phenomena in cerebral syphilis, and their peculiar association with one another, afford quite a different clinical picture from that seen in the ordinary case of paresis. While cerebral syphilis *in toto* is progressive, its individual symptoms are not necessarily so. Moreover, while paralytic disturbances of speech are common in cerebral syphilis, they are usually of brief duration, and the peculiar progressive alteration of speech found in general paresis is practically unknown in this disease. The palsies of paresis, while they may be sudden in onset, are usually partial in character, amounting often times to little more than a muscular weakness, and, although they not infrequently clear up, they do so gradually, and if they recur they tend to reappear in the same part of the body, not in some totally different portion, as in cerebral syphilis. While we may have, at some time or other, in either of these affections, nearly all the symptoms seen in the other, nevertheless the individual symptoms and the aggregate of the phenomena, for any considerable period in the course of the disease, are never similar, and the steadily progressive course of paresis, with the mental disintegration always in the foreground, and the increasing muscular instability and fine tremulousness, associated with disorder in writing and speech, form a clinical picture not likely to be mistaken by a careful observer for active syphilitic disease of the brain.

There are, however, occasional instances in which the absence of special phenomena, peculiar to either disease, and the predominance of mere mental deterioration, render impossible for a time a differentiation between the two affections. Especially may cases seen very early in their course, before the advent of symptoms of special significance, remain for some time doubtful. Cases first seen so late that all peculiar phenomena are obliterated in the general wreckage of the mind may require, especially in the absence of an adequate history, a postmortem examination for their diagnosis.

There can be no possible confusion between well-developed cases of paresis and tabes; and those instances of paresis with tabetic symptoms are simply cases in which the sclerosis of the posterior columns of the cord, a certain degree of which is present in a large percentage of instances, is earlier, or more extensive, than usual. They are simply cases of combined disease, and, at the most, it may be early in the beginning, merely a question which features, the cerebral or spinal, are going to predominate in the subsequent course of the disease. One of the earliest cases of paresis in childhood ever reported was of this mixed type. It was reported by Strümpell, and is the eleventh case in my summary.

PATHOLOGY.

The essential pathologic changes are: a meningoencephalitis, in which the leptomeninges are thickened, cloudy and more or less opaque, and frequently adherent to the underlying brain; increase in the intermeningeal fluid; atrophy and disintegration of the cortical ganglion cells, and degeneration of the white fibers; proliferation of the neuroglia; granular ependymitis, with increase of the intraventricular fluid, and dilatation of the ventricals; atrophy and shrinking of the convolutions of the cortex.

With these typical changes there is occasionally associated a pachymeningitis, with or without adhesions to the cranium or the subjacent pia-arachnoid, and occasionally a subdural false membrane, and sometimes areas of hemorrhage. The pia-arachnoid, in the majority of cases, is adherent to the underlying cortex, and decortication usually occurs when these adhesions are separated. The two hemispheres are sometimes adherent to one another. The meningitis is very marked over the cortex, but slightly marked at the base. The shrunken condition of the convolutions often leaves the sulci widened. The atrophy and shrinking of the convolutions is especially noticeable in the anterior half of the hemispheres.

The brain, as a whole, is usually, though not invariably, increased in density, but always greatly decreased in weight. Occupying the places of many of the nerve cells of the cortex are proliferated and hypertrophied neuroglia cells with thickened processes. The granular condition of the ependyma is especially pronounced in the fourth ventricle, where the granulations are much larger and, therefore, more conspicuous than in the lateral ventricles. The intracerebral vessels frequently show a greater or lesser perivascular infiltration with round cells and increase in the nuclei of the adventitia, and sometimes actually thickened walls.

Changes similar to those found in the cerebrum may be present in the cerebellum.

The inner and outer tables of the cranium are frequently greatly thickened, sometimes irregularly so, and the cranium as a whole often increased in density.

In the cord the membranes are frequently thickened, and there may be a partial degeneration of the pyramidal tracts, and quite often a sclerosis of the posterior columns. These changes are usually more developed in the upper part of the cord. Degeneration of cells in the gray matter with increase of neuroglia is also sometimes seen in the cord. The so-called spider cells, on which so much stress was formerly laid, but which are now generally recognized as merely hypertrophied neuroglia cells, may be found in the case of poliomyelitic degeneration, as well as in the cerebrum and cerebellum.

ETIOLOGY.

I have said that the clinical type of any disease in childhood is purer than in adult life. We have seen that this is true of the disease we are considering. The same truth applies to the etiology of any disease, and it is true of the etiology of paresis. The old bogies that for years have been employed to befog the etiology of nearly every long-standing or chronic and more or less inexplicable disease in the adult, vanish in the light of the simple history of similar disease in childhood. Given, therefore, such a chronic and seemingly inexplicable disease, occurring in the child as well as in the adult, I believe that we are safer and on firmer ground for the drawing of logical inferences as to the character and causation of that disease when we study it in the child rather than in later life.

No disease, perhaps, has been so overburdened with etiologic factors as general paresis. This is because it has been studied in adult life and the inferences drawn have been based on cases occurring at this period of life, when such factors are most numerous and at the disposal of any one ready to accept them as the direct ex-

citing causes of the disease. Among these supposedly direct exciting causes of paresis may be mentioned phthisis, alcohol, business worries and cares, the "strenuous life," emotional stress and shock, and sexual excess.

What becomes of these factors when we study the affection in childhood? Surely, as direct exciting factors, we are obliged to eliminate all of them with the possible exception of the first two.

As far as tuberculous processes are concerned, postmortem examinations, in children dying of paresis, rarely show any tuberculous lesion of such location or advancement as to render its influence in the etiology of value. What about tuberculosis in its hereditary relation to the disease? For about fifty years tuberculosis has been steadily decreasing among civilized people, notwithstanding our greater refinement and accuracy of diagnosis. Yet paresis is increasing greatly in prevalence, and particularly among the class least liable to phthisis. Moreover, in those races in which tuberculosis is extremely prevalent, paresis is extremely rare, and the prevalence of phthisis in the antecedents of children afflicted with paresis is no greater than can be obtained in the family history of many other patients.

Were alcohol an exciting cause of paresis, the affection would be much more common than it is in the adult. Moreover, were it a factor through hereditary influence, it would be impossible to explain why general paresis has not been one of the common affections of childhood, for alcohol has been used and abused for many generations. It is, indeed, a question whether its actual abuse was not as great (or greater) a hundred years ago as now. Moreover, there is no constant, or even very frequent, discovery in the organs of adults, dying of paresis, of those organic changes, usually regarded as characteristic of alcoholic excess. Finally, it may be remarked that paresis does not show its greatest prevalence in the class most addicted to extraordinary and long-continued abuse of alcohol. I believe that the frequent history of alcoholic abuse found in the child's antecedents, over and above what might be found in the history of any other disease, is to be accounted for on the basis that it is the ordinary concomitant of a more or less dissolute life, either its cause or effect, and that such dissipation and alcoholic excess merely renders its victims more exposed to risks of the infection that is the ultimate and probably the only cause of the disease we are considering.

Moreover, neither coincidence nor any of the above enumerated, frequently asserted, etiologic factors can explain the extraordinary frequency of occurrence in the patient, or in the other children of the family, or among their antecedents, of incidents or conditions well recognized as the stigmata of well-defined and specific constitutional disease.

When paresis is studied in the adult this mass of convincing evidence is lacking, and what might be of value to us concerning his own personal experiences we frequently fail to obtain, either through ignorance, forgetfulness or design on the part of the patient, on whom we must depend for all data bearing on his case, except the objective features he may present at the moment of our examination. When, however, we have to deal with a child, all the circumstantial and direct evidence, personal, familial and antecedent, is at our disposal for analysis and interpretation. We are not, in other words, dependent on the patient alone for our deduction as to the origin of his disease. The more carefully we obtain the family history of infantile paresis by skilful and exhaustive cross-questioning of the relatives, the more thoroughly we examine the father and mother, and especially the other children of the family, the more convincing will be the evidence that we are here dealing with the late results of a specific constitutional disease, and that that disease is syphilis.

This collateral evidence will consist of the presence, at some time in the life-history of one or both of the parents or grandparents, of conditions whose specific significance is beyond doubt. When we do not obtain from the father direct acknowledgement of syphilitic infection, we may extract from his history the fact that he has at some time suffered from disease of the skin, bones or glands, from alopecia, from nocturnal cephalalgia and osteoscopic pains, from ulceration of the throat or soft palate, or affections of the eyes, especially the cornea, and that these conditions have promptly disappeared on the administration of internal remedies or inunctions. Or we may obtain similar facts from the history of the mother, with the addition, however, in her case, of the valuable evidence afforded by the extraordinary deleterious influence of syphilitic disease on her maternal functions and the lives of her offspring. Repeated unexplained miscarriages, still-births and early infant mortality, or the early appearance in her children of syphilides, pemphigus, obstinate rhinitis, unexplained marasmus, blindness or deafness, and repeated convulsions, often terminating in death, or her statements that two or more of her children have succumbed to hydrocephalus or meningitis, or were at one time afflicted with the same and recovered under treatment, are all of most valuable import. In regard to the patient and the other members of its immediate family I may repeat here what I have already said concerning cerebral syphilis:[2]

If we can not obtain from the parents information of specific infection in themselves or symptoms of infection in the early history of their child, we must endeavor to find on the body of the child itself some evidence of previous disease, or, failing in this, seek for such evidence in the other children of the family, in the shape of recent or old traces of syphilitic lesions. . . . In not a few instances nothing in the history or examination of the patient or the family will be found to enlighten us in our doubt, but suddenly an interstitial keratitis appears on the scene and yields the clue for which we have vainly sought. Or keratitis may occur in one of the brothers or sisters, or a chance ophthalmoscopic examination may reveal in one of them, or in the patient, evidence of chorioiditis, reminding us that in searching for specific stigmata in the shape of deformities of the teeth and nose, scars about the mouth or in the throat, impairment of hearing, etc., the fundus as well as the cornea of the eye should be invariably examined, in the other children as well as in the patient.

Were syphilis not the important factor in the causation of this disease that the facts show it to be, we should find that there would be no direct ratio between the care with which we search for specific etiologic data and the success that meets our efforts, whereas the ratio is direct and convincing. Our percentage of failures in obtaining such data is not any greater than it is in the history of other patients with conditions whose positive syphilitic character is beyond question.

Finally, in some instances in which the clinical history lacked this specific evidence, the postmortem examination has not only confirmed the diagnosis of paresis, but has demonstrated in organs, other than those of

2. Cerebral Syphilis in Childhood, THE JOURNAL A. M. A., March 9, 1907, xlviii, 861; March 16, 1907, xlviii, 922.

A Study of 38 Cases of General Paresis, in which the Onset Occurred Before the Completion of the Fourteenth Year.

	Reporter	Family History*	Specific Stigmata in Child	Age at Onset	Sex	Dur. of Dis. Yrs.	Previous Intellect of Child	Initial Symptom	Condition of Reflexes	Condition of Pupils	Predominant Clinical Symptoms	P. M. Exam.
1	Watson: Arch. Neurol., II..	F. d. of G. P.; M. Syphilitic.	−	14	F	9	Dull.....	Change of character	+	Dilated Fixed =	Loss of memory. Tremor. Disorder of speech and gait. Right-sided convulsions. Restless. Dementia.	Typical.
2	Watson: Arch. Neurol., II..	F. Insane, children Syphilitic.	−	14	M	5	Dull.....	Change of character	+	Dilated Fixed =	Loss of memory. Tremor. Speech. Uncleanliness. Apathy. Dementia.	Typical.
3	Watson: Arch. Neurol., II..	M. d. of G. P. in 42nd year.	+	14	F	4	Very bright....	Change of character	+	Dilated Slow =	Apathy, alternating in fits of passion. Threats of suicide. Hallucinations. Convulsions. Dementia.	Typical.
4	Watson: Arch. Neurol., II..	M. Syphilitic Stigmata.	+	14	F	5	Dull.....	Religious delusions.	+	Dilated Fixed =	Religious hallucinations. Uncleanliness. Noisy and violent at times. Dementia.	Typical.
5	Watson: Arch. Neurol., II..	M. Syphilitic Stigmata.	+	13	F	4	Dull.....	Convulsion	+	Dilated Fixed =	Emotional instability. Apathy alternating in periods of excitement. Hallucinations. Ataxia. Headache. Dementia.	Typical.
6	Watson: Arch. Neurol., II..	M. Syphilitic Stigmata.	+	13	F	8	Very bright....	Change of character	+	Dilated Fixed =	Melancholia. Loss of memory. Exalted delusions. Tremor. Speech. Gait. Optic atrophy. Dementia.	Typical.
7	Watson: Arch. Neurol., II..	M. Syphilitic Stigmata.	+	12	M	6	Very bright....	Failing memory	+	Dilated Slow =	Confusion of ideas of identity, time and place. Tremor. Speech. Gait. Childish exaltation. One convulsion. Dementia.	Typical.
8	Watson: Arch. Neurol., II..	M. Syphilitic Stigmata.	+	12	F	4	Dull.....	Mental derangement	↑	↑	Violent mental disturbances at times. Paralysis and Dementia. Paralytic attacks. Increasing irritability.	Typical.
9	Turnbull: Jour. Ment. Sc., 1881.	F. d. of G. P.; M. Epilepsy in preg.	−	10	M	8½	Normal	Hemiplegia	↑	Slow =	Progressing mental weakness. Speech. Dementia.	Typical.
10	Nolan: Jour. Ment. Sc., 1883	F. Syphilitic; P. G. of Insane.	+	14	M	4	Normal	Convulsion	+	Dilated Slow =	Progressing mental weakness. Tremor. Speech.	Typical.
11	Strumpell: Neurol. Centralbl., 1888.	F. Syphilitic.....	−	13	F	L	Normal	Monoplegia	O	Fixed =	Restless. General hyperesthesia. Paralysis. Dementia. Right-sided paralytic attacks. Tremor. Speech. Gait. Ataxia in legs. Progressing mental weakness. Dementia.	L.
12	Clouston: Edinburgh Medical Jour., 1891.	F. Syphilitic; P. uncle d. of G. P.	+	14	F	5	Dull.....	Paralytic attacks...	O	Dilated Fixed =	Progressing mental weakness and loss of memory. Gait. Speech. Nystagmus. Convulsions. Dementia.	Typical.
13	Charcot and Dutil: Arch. de Neurol., 1892.	G. of and Gdm. paralized; M. Stigmata.	−	14	M	L.	Dull.....	Failing memory	+	Dilated Fixed =	Progressive mental weakness. Tremor. Speech. Writing. Attacks of tingling in right leg. Dementia.	L.
14	Wigglesworth: Jour. Ment. Sc., 1893.	M. Syphilitic Stigmata.	−	11	F	5	Normal.....	"Weakness" in legs.	↑	Dilated O. K. =	Progressing mental weakness. Tremor. Speech. Paralysis with contractures. Dementia.	Typical.
15	Wigglesworth: Jour. Ment. Sc., 1893.	Unknown.....	−	14	F	5	Normal.....	Change of character	+	Dilated Fixed =	Apathy. Semi-stupor for months. Progress mental weakness. Tremor. Speech. Dementia.	Typical.
16	Westphal: Charité-Ann., 1893.	M. G. P. after patient..	+	12	F	3¼	Normal.....	Pains in legs and failing sight.	O	Dilated Fixed =	Hallucinations of sin committed. Suicidal impulses. Morbid fears. Optic atrophy. Spasms. Paresis.	Typical.
17	Gudden: Arch. f. Psychiat., 1894.	P. and M. relatives insane.	−	14	M	4½	Dull.....	Writing.....	+	Dilated Fixed =	Transposition of syllables in writing. Tremor.	Typical.
18	Voisin and Reudeu: Soc. d. hôp. de Paris, 1906.	Unknown	+	12	F	3½	Feeble	Cessation of mental advance.	+	↑	Speech. Paralytic attacks. Optic atrophy. Dementia. Decrease of intelligence. Periods of maniacal excitement, alternating in lethargy. Speech. Dementia.	Typical.
19	Thomson and Walsh: Brit. Med. Jour., 1899, I, 784.	1st, 3rd, 5th and 6th children syphilitic; parents well.	+	11	F	6	Normal.....	Cessation of mental advance at school.	+	Not dilat. Slow =	Failing intellect. Convulsions at 12, Kᵖ+ at 12½. Speech at 13. Hallucinations at 14. Tremor. Gait. Headache. Memory for multiplication table and figures lost. Retained.	Typical.
20	Thompson and Dawson: Lancet, 1905, I, 397.	M. uncle Insane; F. and M. well; 1st ch. Hydrocephalic; 2nd and 3rd stillborn.	−	10¼	F	2½	Very bright ...	Cessation of mental advance at school.	Nor.	Not dilat. Slow =	Failing intellect. Tremor. Speech. Writing. Gait. Psychical, visual and auditory hallucinations. Attacks of screaming and laughing. Several brief remissions. Final contractures. Dementia.	Typical.
21	Cameron: Review Neurol. and Psychiat., 1903, I.	Brother with specific teeth.	−	13½	M	6	Normal.....	Failing memory, change of charact.	+	=	Failing intellect. Periods of mania. Screaming especially at night. Gait. Muscular weakness and unsteadiness. Dementia.	Typical.
22	Toulouse and Marchand: Soc. d. hôp. d. Paris, 1899	F. d. of G. P.....	−	10	F	8	Normal.....	Failing memory....	+	Dilated =	Decrease of intelligence. Tremor. Speech. Ataxia. Convulsions. Nocturnal excitement. Contractures. Dementia.	Typical.
23	Haushalter: Ann. de dermat. et de syph., 1897.	Negative.....	+	10½	F	1½	Normal.....	Indiffer. to father's death; ch. of char.	↑	Dilated Slow =	Loss of "joyousness" and neatness. Decreasing intelligences. Tremor. Speech. Gait. Muscular weakness, but no paralysis.	Typical.
24	Haushalter: Ann. de dermat. et de syph., 1897.	F. Syphilitic; M. Stigmata.	−	12	M	½	Normal.....	Failing memory	+	Dilated Slow =	Awkwardness. Speech. Gait. Tremor. Dulness. Recurrent headaches. Dementia.	Typical.
25	Haushalter: Ann. de dermat. et de syph., 1897.	F. Syphilitic; M. Stigmata.	−	8	M	L.	Very bright ...	Change of character	↑	Dilated Fixed =	Narcolepsy. Change of disposition. Awkwardness. Tremor. Speech. Gait. Writing. Depression alternating with excitement.	L.
26	Bresler: Neurol. Centralbl., 1895.	M. Insane: Gdm. Insane; M. Aunt Insane.	−	10	F	4	Normal.....	Cessation of mental advance at school.	+	Dilated Slow =	Change of disposition. Restlessness. Fears. Gait. Alternating apathy and excitement. Inarticulate speech. Indifference to environment. Slight left facial paresis. No tremor. Four convulsions near the end.	↑
27	Woltär: Prag. med. Wochenschr., 1905.	M. had G. P. (at same time.)	−	8	M	4	Normal.....	Cessation of mental advance at school.	+	Dilated Fixed =	Decreasing intelligence. Uncleanliness. Tremor. Speech. Gait. One-right-sided spasm without unconsciousness.	Typical. (Macroscopically)

28	Hoch: Journal Nerv. and Ment. Dis., 1897.	F.?Cerebrospinal syphilis S. had G. P.	—	10	F	6	Normal.....	Apathy.....	?	Loss of desire to play. Lethargy. A year later staggering and muscular. Paralysis. Dementia. Sister with all typical symptoms from fifteenth year onward; + reflexes, fixed, dilated, unequal.	Typical.
29	Dunn: Journal of Ment. Sci., 1865.	Negative.....	?	9½	F	2	Normal.....	Change of character	Nor.	Dilated Fixed —	Typical.
30	Carpenter: Rep. Soc. of Dis. of Children, 1894.	Negative.....	+	10	F	L	Normal.....	Change of character	+	Fixed =	L.
31	Stewart: Brain, 1888.....	M. Stigmata.....	—	13	M	4	Very bright....	Failing memory	+	Dilated Fixed —	Typical.
32	Stewart: Brain, 1888.....	M. Stigmata; 1 child Syphilitic.	—	12	M	L	Very bright....	Failing memory	+	Dilated Fixed —	L.
33	Stewart: Brain, 1888.....	M. Stigmata; 2 children Syphilitic.	—	14	M	L	Very bright....	Failing memory	Nor.	Dilated Fixed —	L.
34	Marr: Lancet, 1888, II. 839.	F. Stigmata. Insane; M. d. insane, prob. G. P.	—	6	F	8½	Normal.....	Restlessness	+	Dilated Slow =	Typical.
35	Hirchl: Wien. klin. Wochenschr., 1891, p. 515.	F. d. of Cerebral Hemorrhage. M. insane and suicidal.	+	13	M	8	Dull	Cessation of advance at school.	+	Dilated Fixed —	L.
36	Infeld: Wiener klin. Wochenschr., 1895.	Unknown.....	+	11	M	6	?	Convulsions	+	Fixed =	L.
37	Bramwell: Med. Jour., 1898, II., 1098.	Unknown.....	?	10	M	4	Normal.....	Cessation of mental advance at school.	+	? =	Typical.
38	Fairbanks: l. c.....	F. d. of G. P.; M. Stigmata.	+	12	M	3	Normal.....	Irritability.....	+	Dilated Fixed —	Typical.

*M., maternal; gf., grandfather; gdm. grandmother; d., died; =, equality of pupils; ≠, inequality.

the nervous system, unequivocal lesions of syphilis. If we make our search ever more rigid and exhaustive, we shall steadily reduce the still remaining small percentage of cases in which specific evidence seems to be entirely wanting, and we shall reach the eventual and inevitable conclusion that syphilis is the one and sole direct cause of this disease, as was asserted by that clear and accurate observer, Fournier,[2] years ago.

General paresis is not more common in children mentally defective from birth. The majority of cases occur in children of average mental ability previous to the onset of the disease.

The "stress of puberty and adolescence" has been thought by some to be of importance in the determination of the onset of juvenile paresis. There can be no question but that, at the present time, the majority of cases seem to have their origin at about this period. We are dealing, however, with a so-called parasyphilitic affection requiring ordinarily from ten to fifteen years to develop. As the specific infection is inherited or, as may rarely happen, acquired very shortly after birth, the age of puberty is about the time when we should expect the advent of the disease. Its incidence at this period is due, I believe, to this fact and not to any peculiar influence offered by this period of life in the determination of the onset of the affection.

Of great interest is the frequent occurrence of similar disease in the other members of the family, especially in the parents or grandparents. Often when we do not obtain a positive history of the occurrence of paresis or tabes in others of the family we shall learn of cases of "dementia." "brain trouble," "insanity," etc., which would undoubtedly prove to be general paresis if we could learn all the particulars. In many cases not included in my summary on account of the age of onset having slightly exceeded fourteen years, this same occurrence was very striking.

In a relatively large number of instances injury in one form or another is assigned by the relatives as the cause of the onset of the disease. In this connection I may repeat here what I have already said of similar occurrences apparently preceding the onset of cerebral syphilis,[2] in which the same fact is often noticed:

> **What is it that induces in one case the concentration of the effect of the specific poison on the brain while another individual enjoys complete immunity from any cerebral implication? This is a problem to which no complete solution is at present possible. Interesting, however, in this connection are a number of cases in which the apparent initial phenomena have followed a blow or a fall on the head. They are not so common that we may refuse to believe them more than coincidences, occurrences brought into the picture by the common tendency of the parent to attribute everything to an accident. Nevertheless they can not be entirely ignored. It may be that, in the one case, the brain by inherited or by acquired deficiency in vitality or in power of defense, becomes a *locus minoris resistentiæ*; while, in another instance, concussion by its circulatory and nutritive disturbances produces a similar condition.**

Paracelsus says: "Syphilis takes, in every man, the character of that disease to which he is inclined by hereditary or other predisposition."

I present here a condensed summary of thirty-eight instances of general paresis occurring well within the period of actual childhood. Not only are these cases, from a clinical standpoint, unquestionably typical instances of the disease, but in twenty-nine, or 76 per cent., we have the pathologic diagnosis to confirm the

2 La syphilis héréditaire tardive, 1886.

clinical. A study of these cases will afford an absolutely accurate idea of the affection as it manifests itself in childhood.

I offer this tabulated summary, therefore, without further comment, for the consideration of all who may be interested in the subject, but who may not have the time or the facilities to study the matter in the original articles.

It is my duty and pleasure to express how deeply I am indebted to those who have reported these cases, for the free use I have made of their material. To many others not here mentioned I am equally under obligation.

ABSTRACT OF DISCUSSION.

DR. SAMUEL J. WALKER, Chicago: General paresis in childhood is, of course, extremely rare. About 70 per cent. of the cases in the adult can be traced to a previous syphilitic history, and in childhood, so far as I know, all the cases reported have shown a history of congenital syphilis. In childhood the type of the disease is purer, as many things that may creep into the cases in the third and fourth decade of life are practically excluded in childhood. Dr. Fairbanks said that he saw this case two years after the onset. Had the case been diagnosed as general paresis before he saw it? If not, what did the parents think was the trouble with the child and what was the diagnosis of the physicians who had seen it? As to the pupillary findings in the adult type—and it is almost necessary to speak of the adult type in paresis—one of the earliest somatic signs is partial or complete Argyll-Robertson pupil. This is one of the earliest and also most frequent signs. It is true that paresis and cerebral syphilis are usually the only conditions that have to be differentiated, but as the condition advances the case clears up as to diagnosis. Some years ago I saw a case of cerebral tumor not associated with optic atrophy. The mental symptoms were very like the symptoms in general paresis and not until the very last, when optic neuritis developed, were we even fairly certain of a diagnosis. The postmortem showed a tumor the size of an egg in the frontal portion of the brain.

DR. ARTHUR W. FAIRBANKS, Boston: The case had apparently not been diagnosed before I saw it. The patient was brought to me at the Children's Hospital, and the parents probably had an inkling of the condition. The family history of the boy was what I think gave the mother an idea of what was happening. The father had died in an insane hospital with a diagnosis of organic dementia four months before the child was seen. The postmortem revealed diffuse arteriosclerosis including the basal vessels of the brain. It was not stated whether it was specific or not. In this case there was a perisplenitis and a perihepatitis. The mother gave no specific history as to rashes, miscarriages, etc., but the family physician stated that several years before she had come to him with an obstinate ulcer of the leg and two years later with iritis; neither trouble would yield to anything but the administration of potassium iodid. A sister of this boy is defective mentally and has an acquired strabismus. I think that there can be no question but that here we have a specific origin for this disease. The pupils were dilated markedly, and while one would slightly respond at first, later it became fixed and remained fixed for the rest of the child's life. I think that a tumor would have to be in a very peculiar location, as was Dr. Walker's, to confuse the diagnosis. It is true you do get the changed character, as in paresis, but you also get vomiting and an optic neuritis, which you do not get in paresis. Then the focal signs would point to a localized lesion of the brain. Occasionally, when the optic neuritis and vomiting are absent, it might for a brief time obscure the diagnosis, but not for long. In the synopsis I have here of these thirty-eight cases, all well within the period of childhood, you will notice the extreme family syphilitic history. It is very striking. Sometimes there is no outward evidence of stigmata in the patient. One should then examine the brothers and sisters, and examine the fundus as well as the external eye. Then one may find iritis or chorioiditis.

MERCURIAL TREATMENT FOR THE LATE MANIFESTATIONS OF SYPHILIS.*

HERMANN G. KLOTZ, M.D.
NEW YORK.

THE HISTORY OF THE TREATMENT OF SYPHILIS.

Syphilis had hardly been introduced into civilized Europe, when mercury offered a helping hand in the treatment of the new disease. As early as 1497 Gaspardo Torella, an Italian physician, recommended mercurial ointment. This early external application of mercury probably was not merely accidental, as some authorities would imply, but due to the fact that mercurial ointments had long been in use against all kinds of skin diseases, having been first introduced into practice by the Arabian physicians in the twelfth century. As the principal and most obvious symptoms of the new disease were pustules, ulcers and other lesions of the skin, it was quite natural that the customary remedies for skin diseases should be applied.

Following the reckless abuse of mercury during the earliest period, when the treatment of syphilis was not generally in the hands of the better class of physicians, the vegetable decoctions for a short time superseded it under the guidance of the knight-errant Ulrich von Hutten, who sang the praise of guajac. But soon mercury was again recognized and firmly established as the only and true specific of syphilis, a position which it maintained without difficulty from the middle of the sixteenth to the early part of the nineteenth century.

During the early periods the use of mercury was entirely restricted to external applications, mostly ointments, but also plasters and at times fumigations; about 1535 Pierre-André Mathiole initiated the internal treatment with the red oxid of mercury, but the medication per os did not become popular until towards the end of the sixteenth century. During the following century many new preparations for internal use were introduced, among them numerous secret ones; later Van Swieten's liquor, a solution of the bichlorid, gained much favor; the protoiodid, first recommended by Biett and much favored by Ricord, was widely adopted in the early part of the nineteenth century. Inunctions retained their place beside internal treatment, but were conducted in a much safer and more reasonable manner than in the beginning.

In the eighteenth century, following the unfortunate deception of John Hunter, the identification of the three venereal diseases, gonorrhea, chancroid and chancre, was responsible for another period of too ardent use of mercury, and there appeared a more decided antimercurialistic tendency, at first in Great Britain, later also in France and Germany. Adversaries of mercury had existed from the beginning, primarily, probably, on account of its influence on the salivary organs.

That external applications could produce salivation had been known to Teodorico of Bologna and Guy de Chauliac as early as the end of the thirteenth and the beginning of the fourteenth century. Probably owing to the usual coincident appearance of salivation with the marked improvement of the symptoms of the disease, soon the opinion began to prevail that salivation was

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-ninth Annual Session, held in Chicago, June, 1908.

*The conclusions are based on practical experience, but the demonstration of the effects of mercury on the *Spirochæta pallida* and of the presence of the latter in the late products of syphilis apparently explain and justify the same in theory.

really beneficial and, in fact, essential to a cure. This theory persisted almost without any contradiction until the end of the seventeenth century, when David Abercromby, in 1684, was the first to formally declare that salivation was not necessary to obtain the favorable effects of the drug. It was a long time before the old doctrine lost its hold on the medical profession in general, and it is by no means extinct now; one still meets in the periodical literature and even in text-books the hardly disguised or concealed opinion that a certain amount of salivation is more or less desirable or unavoidable and necessary during mercurial treatment. It surely is found frequently enough on patients with, but more commonly without, the beneficial effect on the disease itself. But besides the well justified dread of salivation there has always existed a not so well explained fear of some mysterious and mischievous power of mercury which would render it a most dangerous drug. In spite of the long-established fact that the symptoms of real mercurial poisoning are entirely different from those occurring in the course of syphilis, and in spite of the easily obtainable proof that mercury is more or less rapidly eliminated in measurable quantities in the urine, the saliva and the feces, there still lingers to-day, not only among the laity but even among members of the medical profession, the idea that mercury will remain indefinitely in the bones or somewhere else in the body. Many physicians who shrink with horror from the idea of administering one and a half grain of calomel by an injection, would not hesitate for a moment to prescribe one or even two ounces of iodid of potassium daily.

It was then quite natural that a constant search should go on for another, less objectionable, specific for syphilis. But all efforts had failed until in 1836 Wallace of Dublin introduced the iodid of potassium in the therapeutics of syphilis. Its success was remarkable; no objection whatever was raised to it and it was at once accepted with favor by the practitioners and generally approved by eminent syphilographers of that time like Ricord. The physician who had been afraid of mercury could now quiet his conscience by treating his patients with the new, apparently harmless, remedy. Not all the high expectations, however, were fulfilled; it soon became apparent that iodid could not entirely supersede mercury and that its best effects were obtained in combination with the latter.

THE LIMITATIONS OF THE IODIN TREATMENT.

I do not wish to enter here into a discussion of the much mooted question whether iodin has any really curative influence on the disease and its causative agent itself, or, as some authors believe, only disposes of the symptoms by promoting absorption of the pathologic products and by eliminating toxins. To be candid, we are, or at least we were until quite recently, in the same position with regard to mercury, but in the light of recent discoveries it seems highly probable that mercury has a direct restraining or destroying influence on the spirochete.

It soon became apparent that the later or so-called tertiary symptoms offered a more favorable field for the iodids than the early or secondary ones. I must say that in my own experience I often find iodid of great value in certain early conditions, particularly in some affections of the throat. This preference of iodid for the tertiary stage soon became widespread, and gradually the rule has crept in and has become more or less generally established that in the later stages of syphilis the iodids are absolutely necessary for a cure, and that they alone should be given and mercury be entirely discarded. This doctrine has all along been disputed and condemned by eminent students and men of great experience in the treatment of syphilis like Virchow, Ricord, Mauriac and, among others, by that industrious student of syphilis, the late Robert W. Taylor. Still, this arbitrary rule, as he called it, continues to be proclaimed by the authors of text-books; it is continuously met almost as beyond dispute in the periodical literature; and it is evidently almost generally followed in the daily practice of thousands of members of the medical profession. In fact, the belief is so deeply rooted in the mind of the majority that any attempt to throw doubt on its correctness will be looked upon as arrant heresy.

In general, the tertiary and gummatous manifestation of syphilis offer a much better criterion for the effectiveness of a certain remedy or method of treatment than the earlier, secondary ones, because, as a rule, they do not possess the inherent tendency to improve or to disappear spontaneously, which, to a certain extent, is present in the earlier, principally the more generalized, eruptions; they are rather progressive and increase or advance unless checked by treatment. The various late manifestations, however, show decided differences of character and development; ordinarily we associate with the gumma or the gummatous infiltration the more or less pronounced tendency of the newly formed tissues to break down and undergo degenerative changes, leading to absorption or to destruction.

There exist, however, later products of syphilis which do not have such a tendency, but are considerably persistent and resistant. I am not speaking of those conditions which now are usually designated as parasyphilitic, but of quite distinctly specific and substantial affections of various organs in which the prevailing tendency is to form new, rather firm, often almost sclerotic tissue. Such late syphilitic processes are observed in almost all viscera, sometimes side by side with really gummatous products, as in the liver, the kidney, the lungs, the adrenal glands; they occur in the testicles, in lymph glands, in the bony structures, preferably in the central and the peripheral organs of the nervous system, including the sensory organs, and finally in the blood vessels, not only of the brain, but also in the large trunks, in the arteries and probably the veins of the extremities and in small terminal vessels. In fact, the origin of all these products of syphilis seems to be ultimately connected with the blood vessels. The skin, the subcutaneous and submucous tissues, as well as the mucous membranes themselves, which furnish a large percentage of the secondary and also of the more common gummatous formations, are less frequently the seat of these more persistent formations; they may, however, appear here and on the bones in the shape of real tumors. There must also be mentioned the mostly unilateral, late scaly affections of the palms, soles and occasionally of other portions of the skin. All such cases present a more or less pronounced resemblance to similar conditions of entirely different origin; they therefore are liable to offer the greatest difficulty to the establishment of a correct and sure diagnosis. They frequently give rise to mistakes in treatment, particularly to the performance of not only unnecessary but absolutely harmful operations. The late Professor von Esmarch was candid enough to publish some years ago a report of a

number of cases in which the syphilitic nature of the affection was recognized only after the operation and in some instances only after the recurrence of the growths. Naturally the patients under such circumstances are often submitted to the test of therapeutics, and on the result of the tentative treatment future proceedings will depend.

Now all lesions of this kind are more or less refractory to all treatment, but in the majority of cases they are not at all or but slightly affected by iodids alone, even in the large doses commonly given in our country; they are likewise resistant to the so-called mixed treatment. But the partisans of iodid will retort that they are not affected by mercury alone either. This, I freely concede, is true in regard to the methods of mercurial treatment heretofore principally in use. The pills of the protoiodid which seem to be the great favorite in our country, are practically inert in such cases. Solutions of the bichlorid, which are much less used than they deserve, and the mixed treatment may produce an improvement or an apparent cure, but mostly only a temporary one, soon followed by a relapse. Inunctions, even if made correctly and with all the accessories which are necessary to obtain the full benefit, are often enough ineffective, but much more so if they are made in the slipshod way only too common among patients who are not willing to change their often very unhygienic ways of living.

INJECTIONS OF MERCURIAL SALTS.

Mercurial treatment, however, has entered on an entirely new phase by the introduction of the hypodermic and intramuscular injections of soluble salts, and even more, of the insoluble salts and of the gray oil and similar substances. It might seem as if there could be but little difference in the therapeutic effects between the frequently repeated injections of soluble salts and the intramuscular injections of insoluble ones, made at longer intervals. It had been assumed that the latter furnish a deposit of mercury on which the organism gradually draws in small amounts until the deposit is nearly exhausted, when a new supply is furnished. But recent investigations, particularly those made under the auspices of Jadassohn by Emil Buergi of Berne,[1] have shown different conditions. It appears that subsequent to an injection an increased amount of mercury is at first eliminated in the urine and after about two days becomes reduced; evidently, then, during the first days following the injection a large amount of mercury must circulate through the blood so that we actually receive from the injection a single large dose of mercury, much larger than it is possible to introduce by any other method; and during a series of injections we have a number of such inundations of the entire system with the drug, a number of mercury storms, if you please. At the same time the entire amount of mercury consumed is much smaller than with other methods. For instance, if during the entire course of treatment within, say, two years, a patient receives altogether fifty injections of 10 centigrams of the salicylate of mercury which contains about 59 per cent. of metallic mercury, the total amount of the metal entering the body will amount to 2.95 grams, or about 47 grains. With calomel, which contains 84 per cent. of mercury, the total amount would be less than 68 grains for fifty injections, but ordinarily a smaller number would probably be required. Attention must also be called to the fact, so far not fully explained, that according to S. J. Meltzer and Auer,[2] the conditions of absorption in the muscle tissue are more favorable than in the subcutaneous tissue and very near to those of injections directly in the veins. The widespread use of these injections in Europe has certainly demonstrated beyond doubt that the human organism can stand much larger doses of mercury than formerly had been employed and that could safely be introduced through any of the older methods.

It has also been made evident that in many cases of syphilis such large doses are required in order to obtain the desired results, that conditions which heretofore had remained unaffected by any specific treatment and therefore had not been considered specific any longer, now have to be accepted as such. These facts have been insisted on by numerous authorities, principally in France by Leredde and others, and quite recently have led to the recommendation of a "plurimercurial" treatment by Jaquet,[3] consisting of the simultaneous administration on the same day of pills of the protoiodid by the mouth, Van Swieten's liquor by rectal injection, the intramuscular injection of one centigram of the biniodid and the inunction of two grams of blue ointment. These applications are to be repeated on several days in succession and to be taken up again after a more or less extended interval. Without commending such exaggerated treatment, I must insist that the intramuscular injections of insoluble salts have come into such general use all over the entire European continent and, if I am not mistaken, lately also in Great Britain, that an immense number of observations is in existence which prove that these energetic applications of mercury exert a much greater influence on the late manifestations of syphilis, not only on those which heretofore mostly yielded to iodids alone or in combination with mercury, but also on those more solid formations of which I have spoken before. The practice of these injections is now and has been for years so common that one hardly finds now any special articles on the subject, but whoever peruses the current literature, even to a moderate extent, will meet numerous examples of cures effected by injections when iodids and inunctions had failed, even in the hands of experienced men, particularly in cases of affections of the nervous centers.

To mention only a few recent publications, in a paper on "Experience with the Treatment of Disturbances of the Nervous System on a Syphilitic Basis," by W. Harttung and O. Förster[4] of Breslau, the former reports cases of paralysis, etc., the latter cases of incipient tabes; and V. Mucha, from the clinic of Finger, in a paper on "The Differential Diagnosis Between Lues and Tuberculosis in Ulcerative Processes,"[5] reports several cases in which injections of the salicylate effected sufficient improvement to assure the diagnosis of syphilis which the histologic examination had not been able to clear up. It is, however, almost generally agreed that the most energetic action is obtained from the injections of calomel.

I must mention also a paper which was quite recently published in this country on "The Diagnosis and Treatment of Syphilitic Lesions of the Nervous System,"[6] by T. H. Weissenburg of Philadelphia. He says:

1. Arch. f. Dermat. u. Syph., 1906, lxxix, 3305.

2. Jour. Exper. Med., 1905, vii, 59.
3. Hirigoyen, D.: Thèse de Bordeaux, 1907.
4. Arch. f. Dermat. u. Syph., 1907, lxxxv, 1.
5. Arch. f. Dermat. u. Syph., 1908, lxxxix, 355.
6. Am. Jour. Med. Sc., April, 1908, cxxxv, 551.

It has been my experience that, whenever any benefit has been obtained, it has been the result of the use of mercury and not of iodids. Even in the specific manifestations which come on many years after the infection, mercury is the only drug which will be of benefit. Iodids probably do good, and should be given in conjunction with the mercury, or, better still, after the mercurial treatment.

It is hard to understand why it should be given at all, if mercury, as stated, is the only drug which is of benefit; the recommendation can be explained only as a concession to the prevailing popular sentiment in favor of the iodids, although it seems that many physicians consider it necessary to follow up every administration of mercury by a course of iodids in order to get rid of the mercury as quick as possible—evidently another consequence of that deadly fear of it. I must not omit to mention that Weissenburg recommends the use of inunctions, but I have no doubt that he would be glad to use the insoluble injections if he would only try them in spite of the prejudices against them in America.

My experience with intramuscular injections agrees with that of others who have learned to trust to mercury in the late manifestations. I have used them constantly for about twenty-five years, and after giving a report[1] on the first two hundred injections in 1889 have applied them more and more within the last years, after an extensive previous experience with soluble preparations, the bichlorid and the bicyanid. Several times I have been tempted to return to soluble injections like the strong solutions of the bichlorid as recommended by Lukasiewicz, which were extremely painful and caused much local swelling, solutions of the oxycyanate, mercury salicylarsenate, etc., but I have always quickly returned to the insoluble ones, which I find acting more favorably and having fewer objectionable features. Encouraged by the excellent results in the earlier stages of syphilis, I began to use the injections in the later manifestations when the iodids or the mixed treatment gave results which were unsatisfactory, or as was more frequently the case, not lasting, particularly in the tubercular syphilides. My experience has gradually induced me to trust to the injections alone much more than to the iodids, and I have more and more dispensed with the latter, without, however, giving them up entirely.

I shall not attempt here to give any detailed or specified histories of cases. I shall only state briefly that in the course of years I have treated with injections of the salicylate and to a certain extent of calomel the most various manifestations of syphilis, not only the more frequent gummatous affections of the skin and of the mucous membranes but periostitis and tophi of the cranial and other bones, at times in a condition when a breaking down of the integument seemed unavoidable, affections of the nervous centers and of the eyes, particularly iritis, paralysis of the muscles, neuritis optica, usually at the instance and under the supervision of ophthalmologists, gummata of the tongue and of the lips, swellings of the lymph nodes, gumma of the testicle, late scaly affections of the skin, among them one which appeared on the fingers of the right hand after eighteen years and finally yielded only to calomel injections, gumma of the muscles and syphilitic arteritis. The results at times have been really marvelous, exceeding my keenest expectations; usually very satisfactory; and seldom actually disappointing, although I am far from claiming that the injection will be successful in all cases. In many instances I have been able to watch the further progress of the patients for years, and I have never observed any disastrous or even disagreeable consequences.

The injections of calomel have been the particular object of abhorrence to the adversaries of the insoluble injections. In fact, they are more liable to cause some local inconvenience; circumscribed subcutaneous swellings or nodules, as a rule painful only on pressure, are not so rare as after the salicylate, but these swellings have not the tendency to break down or to leave any outward marks; the general symptoms, slight malaise or fever, usually appear in a slightly more aggravated degree, somewhat later than after the salicylate and of longer duration. In a large number of cases, however, the general and local effects were not aggravated and at times entirely absent.

In some instances I have indeed found a greater tolerance of calomel than of other preparations. Thus, in two cases in which the injections of the salicylate caused diarrhea with tenesmus, calomel did not cause the slightest disturbance of the bowels, although in the one case a large quantity of sugar was present in the urine. In a case of a chronic albuminuria, soon after an acute exacerbation of an old nephritis which antedated the syphilis infection, the albumin entirely disappeared during the treatment of a gumma of the testicle with calomel injections. I have felt encouraged to make these perhaps somewhat hazardous trials by the confidence which long experience has created, but I do not advise others to repeat them until they have obtained sufficient experience and know all the safeguards.

The intramuscular injection of the insoluble preparations from the begining have in this country met a widespread and bitter opposition which must remain unaccountable to anybody who has approached the new treatment without bias and has tried it for a reasonable time. As a rule the physicians of our country are by no means averse to taking their cue from European teachings; on the contrary, many things in theory and practice are accepted and adopted solely on the strength of their European origin and recommendation. Still, this method which has been practiced in all the countries of the European continent for more than twenty years, which has become the favorite and is recognized as the most efficient one by almost all syphilographers of renown, is hardly mentioned or is peremptorily condemned and depicted with such horrible colors by the authors of textbooks and prominent teachers in colleges and universities, that students could hardly help considering its use almost a crime.

What will such students think of their teachers if across the street in a dispensary they find younger men using insoluble injections without fear and with excellent results, or if going to the European centers of teaching they see the intramuscular injections universally employed and acknowledged without dispute as the most efficient treatment? It certainly seems to be the duty of teachers to give to such a treatment a sufficient, unprejudiced trial, preferably in a hospital under careful observation, before condemning it as unscientific, mutilating, ineffective and dangerous to health and life. Still at last year's meeting several men who strongly opposed this treatment have directly stated that they had never made an injection of an insoluble salt. Of course, each man is responsible for his actions to his own conscience, but by the failure to apply other well-known

1. Jour. Cutan. and Genito-Urin. Dis., 1890, vii, 41, 98.

methods if the usual ones fail, he deprives his patients of the benefit of a treatment which has long ceased to be an experiment.

I can not permit a method to be called unscientific which employs the smallest amount of mercury to obtain the greatest results, a method in which you know exactly the amount introduced and in which you may trace within a few weeks up to 30 per cent. and more in the urine, a method in which every bit is actually absorbed and in which the conditions for absorption are favorable. Or does anybody mean to assert that the inunction method is more scientific, when we not even know exactly whether the mercury is principally introduced through the skin or through the lungs? I cannot admit that because among hundreds of thousands of injections in a few cases several local troubles have occurred, the injections are mutilating. The worst result I have ever seen was a superficial circumscribed gangrene of the skin and subcutaneous tissue which I have conscientiously reported,[8] without being able to explain its immediate cause. I have only once since the first three months had any abscess after I had begun to make the injections. That was in two dispensary cases in which probably the injection fluid was at fault, for after throwing it away no other abscesses followed. Even when they occur, as a rule, they are aseptic, and not very acute or very painful. In contrast to the frequent affections of the oral cavity and the gums during internal treatment, inunctions and soluble injections, the almost entire absence of salivation and of every disturbance of the gums, particularly during salicylate injections, has always been a great and pleasant surprise. It has been one of the most cogent reasons for the now almost regular employment of the treatment. I have nothing more to say on the subject of the efficiency of the treatment.

As to the dangers resulting to health and even life, I admit that under exceptionally unfavorable conditions the intramuscular, insoluble injections are liable to become the cause of death in the very same degree as soluble injections, inunctions, fumigations and internal administration, applied with all necessary and known precautions. Cases of fatal consequences of all these methods can be found recorded in literature, but since the method has been better understood than it was in the beginning, not more frequently after insoluble injections than after treatment with the soluble salts.

Two accidents, however, are likely to occur: diarrhea (colitis) with tenesmus, and embolism of the lung. I have had experience with both, and, while I admit that they are very annoying complications, they are not really dangerous and do not permanently impair the health. The intestinal symptoms at times seem to be due to an incidental indigestion or neglect of common rules of diet, but usually appear as the effects of idiosyncrasy after every injection, even in reduced doses. The peculiar experience with calomel I have mentioned before. The trouble rarely lasts longer than twenty-four hours; it occurs oftener after the bichlorid and the oxycyanate than after the insoluble salts. I have published my experience with embolism of the lung[9] in 1898; since then I have seen only a few more. None of the patients was seriously sick at any time, they all recovered in a few days without any further trouble. I do not believe that embolism can be entirely avoided even with all the precautions that have been advised, like the removal of the syringe before injection. Altogether, I have long come to the conclusion that the beneficial effects so far outweigh the disadvantages that I am willing to take so much risk for the benefit of my patients, and I have usually found the patients ready to do the same thing.

It has been mentioned as a drawback that the patient has to be seen by the physician more frequently. This objection applies much more strongly to the soluble injections which have found so much favor with some men who so strongly object to the insoluble ones. I believe that the necessity of regular visits is rather an advantage. It certainly is not safe and correct to allow a patient to continue internal treatment or inunctions indefinitely without regular observation by the physician, as is quite often done. Soluble injections are generally quite painful immediately after the application, for one-half to two hours, are made every day, while the seat of the insoluble ones is really painful only on pressure or during movement for about thirty-six hours. The best proof that the patient does not suffer so cruelly as has been asserted is the fact that some have been perfectly willing to stand from fifty to sixty injections. As a rule, I have found patients neither cowards who were not willing to stand some discomfort or even pain, nor such fools that they did not recognize the advantages and the conveniences of the method.

CONCLUSIONS.

The following conclusions embody the points which I wish to emphasize:

Tertiary or late manifestations of syphilis can usually be as successfully treated by mercury alone as by iodids alone or in combination with mercury. In many instances they are influenced by strong mercurial methods when iodids and mixed treatment have failed. It is therefore advisable, in clearly syphilitic manifestations, not to cease specific treatment, and in doubtful cases not to dismiss the diagnosis of syphilis until such strong mercurial treatment has been sufficiently applied as offered by the intramuscular injections of insoluble mercurial preparations, of which calomel is the most reliable one.

These statements I do not ask you to accept without your own investigation; I ask you to subject them to a fair and unbiased trial. I am well aware that not all such cases of syphilis come under your observation, but that some are in the hands of general physicians or surgeons or of specialists, particularly neurologists, laryngologists, ophthalmologists and others, and that my statements ought to have been made before a general medical audience. It seems to me, however, that general practitioners as well as specialists will look for their guidance to those who make syphilis a subject of their special studies, and that they are not likely to adopt a treatment until it has been approved or at least has been brought to the knowledge and laid before the judgment of the syphilologists.

The conclusions are based on practical experience, but the demonstration of the effects of mercury on the *Spirochæta pallida* and of the presence of the latter in the late products of syphilis apparently explain and justify the same in theory.

130 West Fifty-eighth Street.

ABSTRACT OF DISCUSSION.

Dr. J. M. King, Nashville: I think we fail many times to relieve severe and malignant cases in the late stages of syphilis, because we do not use our remedies, particularly mercury, in

8. Arch. f. Dermat. u. Syph., 1903, lx, 399.
9. Arch. f. Dermat. u. Syph. xliii, Festschrift, für Pick., 1898, p. 407.

sufficient quantity or with sufficient energy. Fournier certainly impresses this on us in his late text-book. I recently saw a very malignant case of syphilis in a man who evidently furnished fresh soil for the disease. He had received internal treatment for two years, during which time he visited Hot Springs twice, but still his lesions failed to heal. He had developed a severe glossitis with a generalized skin eruption two years after the initial lesion. He also had a hard lesion on the glans penis, and a granulomatous lesion on the calf of one leg. Large doses of iodid had failed to relieve him. I gave him seven calomel injections, in doses of 5 centigrams, injected deep into the gluteal region, and afterward substituted gray oil. Under this treatment his skin eruption practically cleared up, and the gummatous lesion on the right calf is almost healed. While the injection treatment is certainly the most efficacious method of treating syphilis, there is one objection to the use of calomel, namely, it is liable to produce pain and tenderness and even abscess at the site of the injection unless it is injected deep into the muscles.

DR. JOSEPH ZEISLER, Chicago: The remarks made at the meeting of this section a year ago by the late Dr. Robert W. Taylor were rather denunciatory of the use of insoluble injections in general. I then warmly defended soluble injections and opposed the use of the insoluble salts. It is therefore only fair that I should now be permitted to express my change of front since that time. I was impressed by Dr. Gottheil's paper on this subject at our last meeting, and after an exchange of ideas with him, I began the use of injections of salicylate of mercury about eight months ago. Since then, after having given several hundred of these injections, I have been perfectly delighted with them. In certain forms of deep-seated tertiary lesions I was able, by means of injections of the insoluble salts, to produce results far superior to those of any other method of treatment that I had hitherto tried. I recently saw a young physician, a former pupil of mine, with mucous lesions and other evidence of an old syphilis. He objected to the proposed use of injections of salicylate of mercury, and when I expressed my surprise at this, he said that he had read my remarks on the subject made a year ago. I told him practically what I have said here to-day and explained my change of view, as I had already done on a previous occasion, at a meeting of the Chicago Medical Society. He still objected to the injection method, and I thereon refused to treat him. The following day he returned and made no further objection, and after the third injection the mucous patches on his tongue had disappeared, and my young friend had become very enthusiastic in regard to the treatment. In his case, only four or five injections were necessary. Many of you who at the present moment are opposed to the use of the deep injection of the insoluble salts of mercury in syphilis do not, I venture to say, even use the soluble ones. I believe that if you will take up the method and familiarize yourself with its technic, which is extremely simple, you will soon become as enthusiastic in regard to it as are Dr. Gottheil and Dr. Klotz.

DR. M. L. HEIDINGSFELD, Cincinnati: I have used a preparation of lanolin and metallic mercury equal parts, by weight, with very gratifying results for a number of years, and it has also been employed by a number of confrères, including Dr. L. E. Schmidt of Chicago and Dr. Eugene Hay of Hot Springs. I have never given a larger dose than 3 grains, but Dr. Schmidt has given as high as 5 grains of metallic mercury to each injection. Its results are especially shown in the very severe and persistent forms of eruption affecting the mucous membranes. The average case of syphilis will take care of itself, but some of these persistent cases are the ones wherein the injection treatment has been most gratifying. I recall the case of a man of 32 who came to me during the past year from Savannah, Ga., with the history of an epithelioma of the penis. The lesion had originally been regarded as syphilitic, but as it had failed to improve under the internal administration of mercury and the iodids, the penis was amputated. When I saw him, eighteen months later, there was a supposed recurrence. This entirely cleared up after a few injections of the insoluble salt in large doses, which proved the case to be one of syphilis without a doubt. The chief advantages of the preparation are the stable character, large dosage and great tolerance.

DR. W. H. DAVIS, Denver: At the time of the last meeting of the section I had been using injections of the salicylate of mercury. Subsequently I began the use of gray oil, and from the latter I have not had the painful indurations and infiltrations that I had when I used the salicylate. I regard gray oil as the best preparation I have used. I am sure that if you will take up the use of gray oil in accordance with the technic of Dr. Gottheil, the good results you will obtain will be a revelation to many of you.

DR. EUGENE CARSON HAY, Hot Springs, Ark.: Up to two years ago I used the soluble mercurial salts entirely for injection purposes. The bichlorid I never used, on account of the pain to which it gave rise. About two years ago I began the use of the salicylates of mercury, and while my results have been good, I think that perhaps we are apt to become too enthusiastic in regard to it, and forget the equally brilliant results that may be obtained by the older methods. I am still a believer in the ordinary routine treatment of syphilis, and my experience with the inunction method especially has been very favorable. If we take, for example, one hundred cases of ordinary secondary syphilis, and give the patients inunction treatment, and then take a second hundred and treat them by injections of the insoluble salts, I venture to say that the lesions in the first hundred will clear up just as rapidly as those in the second hundred; in other words, that the results of one method of treatment will be just as good as those of the other. Of course, there are exceptions. Some individuals apparently do not get the effects of mercury when given by inunction, and in such cases the injection method can be substituted. Frequently the first symptom produced by mercury is its depressive effect on the nervous system, and the gums are not an infallible guide. I saw a man recently who received sixty inunctions of mercury without any effect, and who rapidly improved with the substitution of the injection method. I gave up the use of the insoluble salicylate of mercury entirely about six months ago, because so many patients complained of the pain produced by the injections, and have been using the modified gray oil ever since. This modification I learned of through a conversation with Dr. Heidingsfeld about three years ago. He told me about a combination of lanolin and bi-distilled mercury that he was using, and sent me a loaded syringe, requesting I give it a trial. I am pleased to state that his modification of Lang's oil gave rise to less pain than any other preparation of mercury that I have ever employed, and the results have been generally very gratifying. In severe or malignant cases of syphilis, where a rapid effect is desirable, I prefer the injection treatment, but in the ordinary run of cases I can accomplish just as much with the inunctions. In syphilis of the nervous system I look on injections as the best method of treatment.

DR. WILLIAM A. PUSEY, Chicago: I appreciate the value of testimony such as Dr. Klotz has given us in regard to the use of insoluble salts, and in extreme situations I fully approve of the adoption of injections of mercury; but I prefer to give mercury by the mouth rather than by the muscles, for the same reason that I prefer to give nourishment by the mouth rather than by the rectum; and so long as a patient can take it by the mouth and be benefited thereby, I see no reason against that method of administration in the majority of cases. Whenever I listen to a discussion of this kind, emphasizing the ease and efficacy of these newer methods, I wonder if my experience with syphilis has been more fortunate than that of most men. The ordinary case of syphilis, in my experience, is one of the easiest things to treat. All the patient requires is rational and specific treatment. The administration of mercury and potassium iodid is an extremely simple proposition, as a rule, and the cases of syphilis requiring the new methods of treatment are extremely rare. As to parasyphilis, nobody knows the relative frequency of parasyphilitic manifestations after any particular form of treatment, nor does it appear that any form of treating syphilis has any effect on the subsequent possible development of

tabes or general paresis. It has not been proved that those diseases are due to the virus of syphilis, and it is more probable that they are due to some of the antibodies of the disease. I do not wish to combat the use of the injection treatment of syphilis in those cases in which heroic treatment is indicated, but I do think that somebody should say a word in favor of the extreme amenability of syphilis to the ordinary methods of treatment.

DR. HENRY CLAY BAUM, Syracuse, N. Y.: Dr. Pusey expresses my views in regard to the proper method of treating syphilis. I employ both soluble and insoluble injections, but only on rare occasions and not as a routine. I believe that if one thoroughly masters any particular method of treating syphilis, and at the same time studies the needs of his patients and keeps them in good health otherwise, he will be successful, whether he employs the injections, inunctions or gives his drugs internally. In rare cases, any particular method may fail; and then a change to another is necessary. In my experience with syphilis, extending over a quarter of a century, I have no apologies to offer for the methods employed—usually internally medication and inunctions. I am inclined to believe that the later manifestations of syphilis are not due to the failure of the method of treatment, but to the fact that the patient was inadequately treated during the early stages of the disease.

DR. M. LYON, DeWitt, Iowa: I notice that nobody has said anything about the intravenous method of injecting mercury, as recommended by Dr. G. Frank Lydston in THE JOURNAL, Nov. 16, 1907. I have treated several patients by intravenous injections of bichlorid of mercury. The injections gave rise to considerable pain, which, however, disappeared rapidly. The preparation I used was a 1 per cent. bichlorid solution, injected directly into the vein. By this method quick results will be obtained in desperate cases—sometimes inside of twenty-four hours.

DR. DAVID LIEBERTHAL, Chicago: I have employed injections of bichlorid, gray oil, calomel and salicylate of mercury in the treatment of syphilis for the past fifteen years. I also use other modes of administration. Whenever I am convinced that a patient will carry out instructions, I prefer the inunction method because I consider the same the treatment par excellence. When difficulties arise for its application, the injections are the next choice. Any one employing them must be impressed by their marked effect. Among others, I recall a case of acute iritis, which cleared up within forty-eight hours after a single injection of salicylate of mercury. If a syringe with a leather or rubber washer be employed, care should be taken that the washer be in good condition, because the leather or rubber readily decomposes and particles may be carried with the injection fluid into the tissues and cause abscess. As a menstruum for insoluble preparations, olive oil is preferable to liquid petrolatum, because the latter is apt to produce harder infiltrations and of longer duration. The injections of insoluble salts should rather be applied hypodermically than intramuscularly, because if an abscess should form, it is more easily accessible. In tertiary manifestations, we should combine the administration of potassium iodid with mercury. After the symptoms have subsided, a prolonged course of mercurial treatment should follow, in order to prevent a recurrence of tertiary lesions.

DR. M. B. HARTZELL, Philadelphia: I have never resorted to the insoluble injections of mercury. The use of the insoluble injections, as admitted even by the advocates of that treatment, is oftentimes followed by disastrous results. Millions of men and women have been successfully treated with mercury given by the mouth. I believe that there are urgent cases of syphilis in which the hypodermic method of treatment is indicated, but in those cases the use of the soluble salts will accomplish quite as much as the insoluble. After you have injected an insoluble preparation of mercury into your patient, it is beyond your control, and you do not know how long it will take to absorb it. Those who assert that the insoluble preparations are more efficacious than the soluble attempt to prove too much. They state that the insoluble mercury is gradually and slowly absorbed, and that the patient is gradually placed under its influence. With a soluble preparation, the effect will continue until the drug is absorbed; with an insoluble preparation, you do not know what will happen. I am opposed to depositing mercury in a man's tissues, since you are absolutely incapable of knowing whether it will be absorbed in a few hours or a few weeks. In the vast majority of cases of syphilis, I believe that this method of treatment is unnecessary. It is easy to say that the patient does not object to the treatment, but I am quite sure that most of us, if we had to take mercury, unless there was an urgent necessity, would prefer to take it by the mouth. In my opinion, the intravenous method of injecting mercury is little short of criminal.

DR. HERMANN G. KLOTZ, New York: I came here on account of the adverse and harsh remarks on the injections of insoluble mercurial preparations which had been made at last year's session, and I had looked for considerable criticism of my paper. I did not particularly mention the gray oil, because I have had hardly any experience with it; I do not believe in having too many irons in the fire at the same time; but if I find a method a good one I study that thoroughly and try to master it. I had regarded gray oil as a valuable remedy in syphilis until recently, when I read papers by Welander and by Zieler, the latter an assistant of Neisser, which really were intended to favor and to recommend the gray oil. But they actually gave me the impression that in its application it is more dangerous and less effective than the salicylate and calomel, because it is more liable to remain for a long time unabsorbed at the seat of the injection. In its action it is apparently more slow and more like the inunctions. I agree with Dr. Pusey that you can treat a recent case of syphilis more or less successfully by almost any method. It is justifiable to try the mildest remedies in the beginning, but if you are confronted with gummatous lesions of the integument or of the mucous membranes that are on the point of breaking down, or with an affection of the nervous system threatening paresis or death, or if you have to deal with a syphilitic iritis, with the eyesight of the patient at stake, then you have no right to delay or to try to temporize. There you have to act quickly and energetically; it is to such cases I have principally referred. If any one present has been so fortunate as not to have seen such cases in the course of his practice, I think that he ought not to oppose the methods of those who have been less fortunate. I can not regard the inunction method of treatment as more scientific than the injections, and it is inapplicable to many patients who can not give up their business. Several speakers have referred to the disastrous results of the insoluble injections. If there are any such results, I should like to have them pointed out and described. I have candidly published all the disagreeable occurrences which I have seen; they were limited to a number of cases of pulmonary embolism, the effects of which were transient in character. When mercury is injected into the muscles, it is no more within or beyond our control than when it is given internally or by inunction. By the latter method nobody can say how much or how little of the drug is absorbed, and when administered internally, we never know how much is taken up by the system, how much remains in the stomach or in the intestines, or how many pills pass unchanged through the intestinal tract and out again.

Norwegian-Danish Translation of Essay on Tuberculosis.—The essay of Dr. Knopf on "Tuberculosis as a Disease of the Masses, and How to Combat It," has been of great service in the crusade against the "Great White Plague." It has been translated into about twenty different languages, and in some cases two translations exist in the same language, as, for instance, an Italian and Russian. We have just received a translation into Norwegian-Danish by Dr. A. C. Amundson for use among the Scandinavians of this country, among whom the death rate from consumption is very high, higher than in the mother countries. The book is published at a low price, 25 cents (to physicians, 18 cents, postpaid) by the Amerika Publishing Company, Madison, Wis. This edition should receive a wide circulation among Scandinavian readers.

NON-SUPPURATIVE INVOLVEMENT OF THE LABYRINTH IN THE COURSE OF MUMPS.

REPORT OF TWO CASES.*

G. W. BOOT, M.D.
EVANSTON, ILL.

Mumps is ordinarily a disease of so mild a character that but little note is taken of its complications aside from the consideration of orchitis. The complication discussed in this paper, while not so common as orchitis, is much more serious as concerns function. The cases I purpose to discuss are those in which the labyrinth is involved in the course of mumps, not by a suppurative process, nor by the extension of a middle-ear process to the labyrinth, nor by the extension of an inflammatory process in the vicinity of the ear, but apparently by metastasis or by a primary localization of the disease in the labyrinth.

I have found in the literature reports on forty-nine cases that seem to me to fulfill these conditions. To these I wish to add the following reports of cases. The first is one which I examined with Dr. Shambaugh in the Central Free Dispensary:

Patient.—T. T., Greek, aged 21, single, occupation shipping clerk.

History.—Four weeks before his attack he worked with a man who had mumps. Three or four days before the onset of the ear trouble he had swelling at the angle of each jaw. These swellings were sensitive to pressure and caused considerable discomfort when he ate sour pickles. About the time of the onset of the ear trouble he had swelling of the left testis. On arising in the morning he noticed that he had a severe whistling of indefinite pitch in the right ear. At the same time he had vertigo which persisted. There was no nausea or vomiting.

Examination.—Both drum membranes were normal with the exception of slight thickening. The whispered voice was heard normally in the left ear, but not heard in the right ear. The Weber test (made by placing a tuning-fork in the median line of the skull) was lateralized decidedly in the left ear. Bone conduction was of normal duration. The Rinné test was positive in the left ear; that is a vibrating tuning-fork which was no longer heard when placed against the side of the skull or over the mastoid was still heard when held close to the auricle of the normal ear, but negative in the right ear; that is, the reverse was observed. There was apparently total deafness for the entire scale in the right ear.

The history of the following case was given me by Dr. Shambaugh, who had examined the patient in his private practice.

Patient.—H. G., female, aged 12, with no history of previous ear trouble.

History.—On the first day of an attack of mumps she noticed ringing and deafness in the left ear. Examination two months later showed both drum membranes normal; there was apparently no hearing for any part of the scale in the affected ear. The child was confined to bed for two weeks subsequent to the onset of the attack of mumps, during which time she was said to have suffered from "bilious fever," a diagnosis which was made apparently on account of the severe dizziness and vomiting, which were marked during that period. At the end of that time the dizziness and vomiting disappeared, but the patient was very weak. Since then there has been no noticeable disturbance of equilibrium.

SUMMARY OF REPORTED CASES.

In reviewing these fifty-one cases the following facts are observed: The ages of the patients ranged from 4 to 41 years, the greatest number of cases (thirty-one out of forty-four) occurring between the ages of 11 and 30. The average age was 18 years. Arranged by decades they were as follows:

	Males.	Females.
1 to 10	1	5
11 to 20	11	9
21 to 30	4	7
31 to 40	3	4
41 to 50	1	0

In all there were 22 males and 27 females. The condition of the middle ear was normal in 23, nearly normal in 4, abnormal in 3. These 3 were not abnormal as the result of this complication. Of the 21 cases in which the state of the drum membranes was not given it is reasonable to suppose that most of them were normal. In the cases in which the tuning-fork tests were given there were no indications of middle-ear involvement.

Mygind gives mumps as the cause of deaf-mutism in 3 per cent. of the cases occurring in Saxony and in 5 per cent. of the cases occurring in America. Bliss reported one case out of 282 cases of acquired deaf-mutism examined by him as due to mumps. Hinton says that next to scarlatina, mumps most frequently impairs the hearing. Buerkner gives mumps as the cause of 2 per cent. of the cases of labyrinthine deafness seen in the Göttingen clinic. What proportion of these cases were cases of labyrinthine deafness of the type under consideration I do not know.

The time of the onset of the labyrinthine involvement has varied from four days before the appearance of the parotid swelling to fifteen days afterward. If the case is excluded in which the labyrinthine involvement was said to have occurred four days before the parotitis, the average time of the appearance of the labyrinthine involvement is seven days after the onset of mumps.

The mode of onset was given in 23 cases as follows: Sudden in 6, rapid in 16, gradual in 1.

Of the symptoms indicating labyrinthine trouble, vertigo is present in 29, absent in 7, and not stated in 15. In the cases in which it is not mentioned it is probable that it was not a distressing symptom or it would have been mentioned. In some of the cases it was a very annoying symptom and is described as severe. In one case the patient fell at the moment of attack as if struck. In another there was an irresistible tendency to fall forward. In another the patient could not walk because of the intense dizziness.

Headache was mentioned in but 10 cases. In 6 it was present and in 4 absent. In none does it appear to have been a troublesome symptom. Nausea and vomiting are mentioned in 22 cases, as follows: Nausea with vomiting in 4, vomiting in 15, vomiting absent in 3. Fever was noted as being present in 3 cases. Unconsciousness is noted but 5 times. It was present in 3 cases and absent in 2. It was probably absent from all the cases in the series except the three in which it was specifically stated to have been present.

Subjective noises were noted in 26 cases. In 25 they were present and in 1 absent. They were unilateral in 3 cases and in 2 of these they were on the right side. The noises were noted as being loud, violent or severe in 7 cases. In the other cases their type and severity are not given.

The labyrinthine involvement was bilateral in 10 cases and unilateral in 32 cases. Of the unilateral cases 15 were on the right side and 14 on the left side. The gait was noted as normal in 3 cases and in 11 cases was described as reeling, drunken, uncertain, staggering or bad.

* From the Ear Department of Rush Medical College.

TABLE OF CASES OF MUMPS COMPLICATED BY NON-SUPPURATIVE INVOLVEMENT OF THE LABYRINTH.

Observer	No. of Case	Age	Sex	Middle Ear	Stage	Mode of Onset	Vertigo	Headache	Vomiting	Fever	Unconscious	Subjective Noises	Unilateral	Bilateral	Gait	
Connor	1	Adult	F	Not Normal	Late	Sudden	+		+				R		Staggering	
Hodgson	2	15	M	Normal	Late		+	+					L			Bilateral Orchitis on 6th day.
"	3	13	F			Sudden	O	O	O							
Roosa	4	24	M	Normal								+	R			
"	5	21	F				+					+	L			
"	6	35	F	Not Normal								+				
"	7	4	F	Normal	5th da	Rapid	+	+	+					+		
"	8	23	M	M. T. Opaque					+				L			
Lemoine & Lannois	9	23	M				O		O						Normal	
Knapp	10	Adult	F	Normal												
"	11	Adult	F	Normal									R			
"	12	25	F		7th da	Rapid	+	+						+		
Moos	13	13	M		5th da	Rapid	+				None			+	Staggering	
"	14	4	F		4th da	Rapid								+		
"	15	8	F		13th da	Rapid					+			+		
Seitz	16	19	M	Nearly Normal	7th da	Rapid	+		O			+	R		Drunken	Slight improvement under K. I.
Brunner	17	30	F			Rapid	+					+	R		Reeling	
Buck	18	11	M	Normal	4th da		+						L		Disturbed	Bilateral parotitis.
"	19	16	F	Normal	3rd da	Rapid	O		O			15 da lo'd	R		Normal	Hearing lost in 24 hrs. Bilateral parotitis. No recovery.
Noyes	20	38	M		7th da	Rapid	O		+			+	+		Bad	Orchitis at same time.
Field	21	Adult	M										+			
Dalby	22	7	F			In 24 hrs.								+		
Pomeroy	23	20	F	Sup. Otitis Med		Overnight								+		
Burkner	24	17	M		3rd da	Rapid	+		+			Severe	R		Reeling	Awoke deaf.
Harlan	25	23	F	Normal	2nd da		+					+	R			Irresistible tendency to pitch forward.
Alt	26	12	F	R. Normal	3rd da		+					+		+		Heard poorly on 1st day. Improved considerably.
				L. Ch. Sup. Otitis									R			
Kayser	27	14	M	Normal	8th da			+	+		+	+	R			Slow pulse.
Tsakyroglous	28	17	M		6th da		+								Bad	Hearing normal.
" "	29	21	F	Normal	6th da		+					+			Bad	
Kipp	30	18	M	Normal	15th da		O		Nausea			O	R		Normal	Orchitis on 6th day.
"	31	14	M										L			
Noyes Reported by Minor	32	11	F	Slight Changes	13th da	Rapid	+		+	101	+	+	R			Was delirious.
Minor	33	28	F	Normal			O		O				L			Pulse 76 on 13th day; 54 on 14th day.
"	34	13	F	Normal	6th da	Gradual	+		Nausea				L			Was dizzy and nauseated the day before parotids swelled.
"	35	19	M	Slight Changes	10th da		+					+	L			Dizzy on 3rd day. Tended to fall backwards on 10th day.
"	36	35	M	Normal	6th da	Rapid	O	O				Loud	R			Weber to the left. No improvement.
Dempsey	37	17	M	Normal		Rapid	+		+			Marked		+		Fell at onset. Deaf during course of mumps.
Foster	38	4	M	Normal		Rapid	+	O	Nausea				L			No forks heard on left side by air conduction.
Lake	39	35	F	Normal	7th da	Sudden	+	O						+		No ocular disturbances. One year later heard 40 v. s. fork only.
Crockett	40	9	F	Normal	14th da	Rapid	O	O						+		
"	41	16	M		Late	Sudden	+		+			Violent	L			Deafness in left ear total in 1 hour. Nausea and vomiting for three weeks.
Haug	42	11	F			Sudden	+		+	+				+	Uncertain	Deafness occurred 4 days before the parotitis. Occipital pain at onset.
Brieger	43				12th da				+	+						Slow pulse. Onesided weakness of lower limbs.
Urbantschitsch	44	12	F		14th da		+	+	+		O	Intense				Occurred in a hereditary deaf mute.
Lake Reported by Hall	45	35	F	Normal	7th da	Sudden	+		+			Severe	L			Lake considered it due to thrombosis of a branch of the internal auditory artery.
Hall	46	17	F										R			Occurred immediately after mumps.
Alt	47	40	M	Normal	3rd da		Severe					+	L			Left sided mumps. Hearing improved so that a whisper heard at first at 1 meter was heard at 5 meters. Looking upwards or arising from a horizontal position caused intense dizziness.
Alt	48	22	F	Normal	3rd da		Severe					+ R	R		Uncertain	Right sided mumps. Could not walk for dizziness.
Burnett	49	Adult	M				+					+ L				Left parotid swollen first, 4 days later right, 4 days later left testis, 4 days later right testis, 2 or 3 days later right sided pleurisy. Apparent motion of objects toward the left. Tends to fall to the left. Has coppery taste in the mouth when dizziness is increased from any cause.
Boot	50	21	M	Normal	3rd da		+		O			+ R	R			Orchitis developed at time of ear involvement.
Shambaugh	51	12	F	Normal	1st da		+		+			+	L			

+=present. O=absent.

ETIOLOGY.

Although a number of these patients had orchitis there seemed to be no relation between the orchitis and the labyrinthine complication other than that they both occurred in a disease of a type in which metastatic involvement was common. There seems to have been no relation between the side of the face involved in the mumps and the ear involved in the labyrinthine complication. Neither was there any relation between a unilateral or bilateral labyrinthine disease other than that already mentioned, that they occurred in a severe type of the disease.

There are three distinct types of labyrinthine involvement in the course of mumps. They are:

1. Involvement of the cochlea chiefly.
2. Involvement of the semicircular canal system chiefly.
3. Involvement of both cochlea and semicircular canals.

The first type is seen in Case 19 of this series in which a girl of 19 with normal drum membranes lost the hearing of the right ear in the course of twenty-four hours on the third day of an attack of bilateral mumps. There was no vomiting, dizziness or disturbance of gait and no recovery of hearing.

The second type is seen in Case 47 in which a man of 40, with normal drum membranes, was taken with severe dizziness, subjective noises and moderate left-sided deafness on the third day of an attack of mumps. In this case a whisper which at first was heard in the affected ear at one meter, after treatment was heard at five meters.

The great majority of cases fall under the third class in which both cochlea and semicircular canals are involved in varying degrees at about the same time. This is to be expected if the anatomic relationship of the parts involved is considered.

Case 44, reported by Urbantschitsch, is particularly interesting. It occurred in a congenital deaf-mute on the fourteenth day of an attack of mumps. The patient became unconscious. She suffered from vertigo, headache, vomiting and intense subjective noises. Later she was found to have lost the small amount of hearing that was present before the attack.

PATHOLOGY.

The pathologic anatomy of this complication has not yet been worked out. I have not been able to find any report of postmortem examinations of this complication of mumps. Reasoning by analogy from postmortem findings in labyrinthine disease from other causes it seems certain that this complication is not due to pyogenic organisms. It is not due to an extension of a middle-ear inflammation. Thrombosis of a branch of internal auditory artery, hemorrhage into the labyrinth, and acute neuritis of the auditory nerve may be present, but judging from the absence of similar conditions in other parts of the body in mumps they do not seem likely causes of the labyrinthine affection. It seems to me likely that the trouble is an acute infection by some non-pyogenic micro-organism, probably the streptococcus described by Bein, Michaelis and Busquet as the cause of mumps, and that it reaches the labyrinth by way of the blood, causing an inflammation that may reach any grade short of pus formation. In some of the cases in which hearing improved considerably under treatment the inflammation could hardly have been more than a serous effusion into the labyrinth. In most of the cases it must have reached a grade severe enough to have caused destruction of the delicate structures of the organ of Corti and of the sensory mechanism of the semicircular canals and vestibule. This type of inflammation is in accord with that seen in the parotid, where there is serous effusion with some cellular infiltration.

The following may be considered as descriptive of the symptoms of a typical case of this complication. About the seventh day of an attack of mumps, but possibly as early as the first day or as late as the fifteenth, the patient, who has no other signs of ear involvement, is seized suddenly with severe vertigo, nausea and vomiting, headaches of a mild type and loud subjective noises. He is unable to walk except in a staggering or drunken manner. In the course of twenty-four hours he becomes quite deaf to the spoken voice in the affected ear. Air conduction is much diminished or lost in the affected ear. The Weber test is lateralized in the better hearing ear if the disease is unilateral. The Rinné test is positive if both ears are involved, negative in the affected ear if but one ear is involved. Bone conduction is of normal duration if but one ear is involved, much shortened if both are affected.

PROGNOSIS.

The prognosis is bad. A few patients show some improvement in hearing under appropriate treatment used early. Most patients have had no subsequent improvement in hearing under any form of treatment. The vertigo often disappears but in some cases persists in a lesser degree for years. The subjective noises tend to become less troublesome in the course of time.

TREATMENT.

Treatment should be both preventive and curative. Preventive treatment should consist in avoiding the things that tend to cause metastasis, particularly chilling of the body. Excitement, both general and local, should be avoided. Elimination should be promoted. Intoxication by food, drink or intestinal putrefaction should be avoided. Circulatory sedatives should be administered.

Curative treatment should be directed toward the absorption of the inflammatory products in the labyrinth before they have caused permanent damage to the intralabyrinthine structures. Potassium iodid and pilocarpin are the two remedies that have been most efficient. Sudorifics, diuretics, cathartics and cardiac depressants would seem to be indicated to limit the amount of effusion into the labyrinth and to cause its absorption. Local depletion might help if used early but its effects are problematic. Inflation, aural massage and remedies that cause aural congestion are contraindicated during the early stages of the attack.

CONCLUSION.

Labyrinthine involvement in the course of mumps is a serious condition as concerns function and since it is not responsive to treatment except in the early stages it should be treated promptly and actively.

800 Davis Street.

Tuberculosis Among Negroes. H. L. Sutherland in the *Mississippi Medical Monthly*, July, urges health officials to report the ravages of tuberculosis in the negro race, and to call the attention of influential negro men and women to it. He also urges physicians to impress on people the necessity for care in the selection of household servants.

HEMORRHAGE OF THE ADRENALS IN INFANTS.

WITH REPORT OF TWO CASES DUE TO INFECTION.*

JENNINGS C. LITZENBERG, B.Sc., M.D.
Clinical Professor of Obstetrics, University of Minnesota.
AND
S. MARX WHITE, B.Sc., M.D.
Associate Professor of Pathology, University of Minnesota.
MINNEAPOLIS.

Hemorrhage of the suprarenal capsules is the most common visceral hemorrhage of the newborn. Malei,[1] Rolleston and Le Conte[2] found the surprising average of 45 per cent. of adrenal hemorrhages in the newborn in 230 autopsies, and only 1 per cent. in adults. These figures probably exaggerate the real conditions, but they illustrate the fact that suprarenal hemorrhage is common in the newborn and much more common than in adults.

Hamill[3] in 1901 wrote an exhaustive paper reporting 90 cases. We have collected an additional 29 cases, 27 from the literature and the two reported in this paper. Conclusions are drawn from these 119 cases.

CASE 1.—Baby W., born March 21, 1905, 10 p. m., in a general hospital, after normal labor; weight 7¾ pounds. Baby was normal in every way until it was 48 hours old, when it refused to nurse, was very fretful, and cried most of the time. Temperature was 106.8 F.; had repeated convulsions and passed black, melanotic material from the bowel; on the third day vomited same kind of material; also passed gas frequently and continued to pass and vomit dark blood. On the sixth day the hemorrhages from the mouth and bowels grew much worse and were of a very disagreeable odor. The baby was evidently suffering from infection; the umbilicus was thought by a consultant to be the avenue of entrance. The baby also showed signs of bronchopneumonia. On the sixth day the baby suddenly collapsed and died.

Autopsy.—March 28, 1905. (Dr. White.) The body is twenty inches long and emaciated. The navel is covered with a thin dry crust. Under the crust the tissues are dry and show no evidence of infection. The omentum does not cover the small intestines but is drawn up beneath the transverse colon. The pleural cavities and pericardium contain no excess of fluid and are free from adhesions. The tongue, pharynx, esophagus, larynx and trachea show no changes. Thymus, size of lima bean; negative. Thyroid gland negative.

Lungs: The right lung is voluminous. Its anterior margins are somewhat pale and have a feathery feeling. The dorsal half of the upper lobe and the greater portion of the lower lobe are greatly congested, dark red in color and show small areas of consolidation. Many areas are very dark reddish or brownish red in color and from these a thick, viscid, bloody substance escapes from the cut surface. The areas are completely airless, sinking in water. There are thus two varieties of lesions seen, the small areas of consolidation, and the larger, more widespread areas of hemorrhage. The lower lobe of the left lung shows changes similar to those just described, but not so extensive. The contrast between the areas of consolidation and of hemorrhage is more pronounced than in the right lung. Heart, normal size; valves, negative; foramen ovale nearly closed. Aorta negative. Spleen about normal size. Pulp dark in color and seems somewhat softened. Kidneys show extensive uric acid infarction in the pyramids. Cortex and capsule show no changes. Ureters and bladder negative. Uterus and adnexa negative.

Adrenals: The right gland is greatly enlarged, being fully the volume of the adult organ, but shorter and thicker. It is firm and on cutting is seen to consist almost entirely of a mass of dark red, clotted blood infiltrating the organ, with traces of the adrenal cortex at the periphery. The left adrenal is nearly as large as the right and infiltrated with blood in a similar manner.

Liver: Shows some staining with bile and a moderate degree of postmortem change on its under surface where it is in contact with the colon. It is otherwise normal. Gall bladder is filled with bile. Pancreas shows no changes. Stomach is distended with partially digested blood. No ulcers or changes in the mucosa are found.

Small intestine: Shows large amounts of partially digested blood in the lumen. In the mucous membrane are a number of patches of swelling due to edema, congestion and hemorrhage, which appears to be into the mucosa and submucosa. No ulcers are found.

Large intestine: There are numerous areas of swelling and hemorrhage beneath the mucosa similar to those seen in the small intestine. These areas vary from 1 to 3 or 4 mm. in diameter. Appendix, 5 cm. long and free from hemorrhage or other change. Retroperitoneal and mesenteric glands do not appear swollen, nor do they show other change.

Brain and spinal cord not examined.

Microscopic Examination: The left adrenal shows marked hemorrhage and necrosis, except for narrow zones here and there just beneath the capsule. In these narrow zones the cells take the stain in quite a normal manner. The blood vessels in this region are distended with red blood cells. In many places the necrosis reaches to the capsule of the organ. The demarcation between living substance and the necrotic areas is sometimes quite abrupt, but, for the most part, it is noted that the parenchyma cells are undergoing degeneration, being sometimes swollen, taking eosin deeply with the nuclei showing varying grades of karyolysis, while the nuclei of the connective tissue reticulum and of the capillary walls still stain well. The areas of hemorrhage correspond, in the main, with areas of necrosis, but in places necrosis is found without hemorrhage. Even where blood is most abundant the reticulum can be traced widely separated by red blood cells and there are many round cells throughout with also many parenchyma cells in various stages of cloudy swelling and necrosis.

In the right adrenal the necrosis is more extensive than in the left, and it is rare to find even traces of living parenchyma cells beneath the capsule. The central portion of the mass consists of red blood cells and fibrin with traces of the reticulum and many round cells. An occasional polymorphonuclear leucocyte is seen. Near the capsule the reticulum becomes more readily distinguished, the nuclei more abundant, and here and there masses of large cells with nuclei in various stages of karyolysis can be seen. Just beneath the capsule there are many hyaline thrombi, which take on a yellowish color with the eosin (water soluble yellow). There is some hemorrhagic infiltration even in the capsule of the gland.

Lung: There is considerable desquamation of the bronchial epithelium. The alveolar walls everywhere are greatly congested and in many places they are thickened by a round cell infiltration. In a few small areas swelling and desquamation of the cells lying in the alveoli has occurred, so that the alveoli are nearly filled. In some small areas in the upper lobe and through the greater portion of the lower lobe extensive hemorrhage has occurred. In these areas the blood is broken down into a brownish pigment in granules, the alveoli are distended with a finely granular substance taking the eosin, and the cells in the alveolar walls stain irregularly and not so well as in the areas where the alveoli contain air. In these areas the blood vessels are widely distended with blood, the pigment of which appears to be breaking down into brownish granules.

Kidneys: The glomeruli are somewhat congested, but stain normally. Some of the convoluted tubules are distended with a substance which is mostly finely granular, but is hyaline in places. In some places the epithelium of the convoluted tubules is undergoing degeneration, and in most of the convoluted tubules the lumen has disappeared because of the swelling of the cells. The Henle's and collecting tubules are often widely distended with a granular hyaline material which stains a dull violet with eosin, while the neighboring red blood cells stain

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Jour. de med. de chir et de pharm., 1865, p. 322.
2. Thes. de Paris, 1895.
3. Arch. Pediat., February and March, 1901

orange. The epithelium of these tubules is desquamating in places. The blood vessels throughout the kidney are widely distended and this is particularly true of the cortical vessels in the neighborhood of the capsular and stellate veins which are also widely distended.

Liver: The liver shows no degenerative lesions, but the vessels, especially the portal branches, are widely distended with blood.

Bacterial cultures were taken from both adrenals, heart's blood, lung, liver, spleen, kidneys, and umbilical vein. The cultures from the spleen, kidneys and umbilical vein were sterile. An organism culturely identical with *Bacterium pneumoniæ* (Friedländer) was found pure in both adrenals, heart's blood, lung and liver.

Pathologic Diagnosis.—1. General infection with *Bacterium pneumoniæ* (Friedländer). 2. Focal necrosis with extensive parenchymatous hemorrhage into both adrenals. 3. Focal pneumonia, with focal hemorrhagic infiltration of lungs. 4. Hemorrhage and edema of intestinal mucosa and submucosa, with melena.

CASE 2.—Baby R., born Oct. 11, 1906, at 9:30 p. m., in the same general hospital. The presentation was a breech, but the labor was not unusually long or difficult. The baby was slightly asphyxiated, but was quickly resuscitated; weight, 8½ pounds. The passages from the bowels were offensive on the first day. The baby lost a pound and a half the first two days; dejections remained offensive. There was no hemorrhage from the bowels. On the third day the breathing was very rapid and the temperature was 104 F. On the evening of the fourth day the baby's color suddenly blanched, it collapsed all at once, and died as if from internal hemorrhage.

Autopsy.—(Dr. White.) The body is twenty inches in length and fairly well nourished. Postmortem rigidity moderate in degree. The naval shows no trace of cord and is covered with a thin dry crust. There is no trace of pus beneath the crust and no evidence of infection. The abdominal cavity contains about 2 drams of dark blood with some dark clots in the right half near the right kidney. The pleural cavities and the pericardial cavity contain no excess of fluid; no blood; no adhesions. The tongue, pharynx, larynx, trachea, thyroid, and esophagus are apparently normal. The thymus is 2 cm. broad, 1½ cm. from above downward, and ½ cm. in its greatest thickness; normal in location, consistency and appearance. The lungs are small and show here and there patches in which the alveoli have become distended with air. Here and there are areas which are darker in color and sink in water, evidently unexpanded portions of the lung. The heart is about normal in size, valves are negative, and the foramen ovale is nearly closed. The aorta shows no changes. The spleen is of normal size. The pulp is dark, but no changes are apparent to the naked eye.

Adrenals*: The region of the right adrenal shows extensive hemorrhage. On the ventral surface of the adrenal is a point of rupture from which extravasation of blood has occurred, infiltrating the pericapsular space and the right perirenal capsule, the inferior surface of the diaphragm, extending along its dorsal portion as far as the foramen for the passage of the esophagus, and infiltrating the ascending and transverse mesocolon. Nearly over the point of rupture in the ventral face of the adrenal the peritoneum has a small opening from which about 2 drams of blood has escaped into the peritoneal cavity, as already described. The right adrenal measures 3x3x2.5 cm., has assumed a nearly globular form, though still concave on the lower or caudal surface where it is in contact with the kidney. On cutting the gland open, its center is a mass of partially clotted blood at the periphery of which remnants of congested and hemorrhagic adrenal substance can be seen. The left adrenal appears but slightly larger than normal and its typical outline is preserved. On cut section the medullary portion appears congested and softened and somewhat widened in places, but there is no evidence to the naked eye of hemorrhage.

The kidneys on cut section are apparently normal. The liver is normal in size and appearance. There is some bile in the gall bladder. The stomach, intestines and retroperitoneal structures show no change. The brain and spinal cord were not examined.

Microscopic Examination.—The right adrenal shows in a few places beneath the capsule small areas in which the parenchyma cells stain well and are apparently unchanged. The capillaries in such regions are distended with blood. A dense mass of blood can be seen outside the fibrous capsule of the gland. The greater portion of the gland substance shows necrosis, with either hemorrhage or marked congestion. The area of necrosis is quite sharply marked off from the areas of living cells. The cells of the parenchyma show all stages leading to necrosis with karyolysis. Near the areas of living tissue the reticulum still retains capacity for staining, but further away the nuclei of both parenchyma and reticulum fail to stain. Here and there, through the areas of hemorrhage and necrosis, considerable round cell infiltration and in many places numerous polymorphonuclear leucocytes are seen. In some small areas karyorrhexis is occurring.

In the left adrenal there is much less hemorrhage and therefore a better opportunity to study the necrosis which is occurring in foci here and there. This necrosis does not reach to the capsule at any place, but occurs in the medullary portion and may involve the zona reticularis of the cortex. The blood vessels in and about the areas of necrosis are widely distended. The demarcation is fairly sharp; in the outer layer only the parenchyma cells are affected, becoming swollen, cloudy, and the nuclei swollen and faintly staining. Deeper in, the cells of the reticulum are undergoing necrosis, but throughout there is considerable round cell infiltration and an occasional polymorphonuclear leucocyte. The blood vessels in the unaffected portions of the gland are distended with blood and in the fat about the capsule many widely distended veins and capillaries can be seen.

The kidneys microscopically appear quite normal. The capsular and stellate veins are injected. The spleen shows congestion in the pulp, but no necrosis. In some places this congestion is so pronounced as to suggest minute hemorrhages. The lung shows some catarrhal inflammation in the bronchi with desquamation of the epithelium. There are many areas of atelectasis and many unexpanded bronchi. Both in areas of atelectasis and in those containing air there is much blood in the vessels, both small and large, and most of the larger vessels show small area of extravasation about them in the fibrous tissue. There is no evidence of necrosis or inflammatory infiltration in the lung. The liver shows no degenerative lesions. The umbilical artery is nearly empty and the umbilical vein shows some clotted blood without any evidence of inflammatory infiltration either in the cord or the walls of the vessel.

Bacterial cultures were taken from the right adrenal, the lung, heart's blood, liver, spleen and kidney. There was no growth in cultures from the kidney, but, from each of the other organs mentioned an organism corresponding in all particulars to *Bacterium pneumoniæ* (Friedländer) was obtained in pure culture.

Pathologic Diagnosis.—1. General infection with *Bacterium pneumoniæ* (Friedländer). 2. Partial atelectasis of lungs, with small foci of hemorrhage and catarrhal bronchitis. 3. Focal necrosis of adrenal glands, with congestion and small hemorrhagic foci in left; with extensive hemorrhage in right, rupting capsule and infiltrating right perirenal fatty capsule, ascending and transverse mesocolon, and inferior surface of diaphragm, and rupturing into peritoneal cavity.

The hemorrhage may be microscopic or so large as to fill the whole gland, or the encysted blood may burst through the capsule into the surrounding tissues or even through the peritoneum, filling the body cavity. In one recorded case the blood burst into the liver, penetrating beneath Glisson's capsule, lifting it from the liver sub-

*Our colleague, Dr. H. E. Robertson, recently isolated a bacterium, identical in all cultural characteristics with the organisms found in these two cases, from a case of pneumonia. This organism caused hemorrhage into the adrenal in a series of four successive guinea-pigs inoculated with a pure culture. Microscopic examination shows necrosis with marked congestion and hemorrhage. One of us (S. M. W.) has also found a small hemorrhage with necrosis in the adrenal of a patient, dying from lobar pneumonia; from the blood and lung bacterium pneumonia was isolated.

stance over a considerable area. In one of Hamill's cases[1] it penetrated into the tissues of the diaphragm.

Hemorrhages bursting through the peritoneum are not common. In Hamill's series of 90 cases there were 11, and in this series of 29 cases one of our cases and one of Oberndorfer's are the only ones which burst into the abdominal cavity, making 13 in the series of 119. There were 19 other large hemorrhages which remained encysted. If we take the bursting and encysted hemorrhages together we find that 28 per cent. of the cases should be classed as large hemorrhages. The size of the hemorrhage, however, does not always determine whether or not it is the cause of death. There were several cases in which the hemorrhages were not large, yet no other cause of death could be found. There were 22 cases in which death could be attributed to no other cause than adrenal hemorrhage and 16 others in which the adrenal hemorrhage was an important factor, if not the determining cause of death. There were but 10 cases in which the adrenal hemorrhage seemed to be of no importance.

Hemorrhage is the most common affection of the suprarenals, next to Addison's disease. One or both glands may be affected, but the right adrenal is the most common location of the hemorrhage, due, probably, to the fact that the veins of the right suprarenal empty directly into the inferior vena cava, making it more liable to share in any congestion of the vena cava than the left, which empties into the renal vein. It is also more likely to be subjected to pressure during labor because it lies between the liver and the vertebral column. In the cases in which the location of the hemorrhages was mentioned, the right gland was alone affected in 16, the left alone in 9, and both in 48 cases. The origin of the hemorrhage is generally supposed to be in the medulla, but Arnaud[4] has shown that the bleeding really takes place in the internal cortical zone, where the capillaries break under the influence of strong congestion. If the hemorrhage is large, it infiltrates the whole gland and sometimes the glandular substance is nearly all destroyed, only a small part of the cortex remaining flattened against the envelope of the capsule forming part of the wall of a cyst filled with a dark liquid or clotted blood. If the hemorrhage is limited to the cortex the bleeding is usually slight. Hengge reports one case with the hemorrhage between the cortex and the capsule of the gland, which also occurred in one of our cases. Fiedler reported two cases with fatty degeneration of the whole suprarenal except the vessels, in addition to the hemorrhages. In a few cases hemorrhage is found only with the aid of the microscope.

In one case (Still[5]) the medulla was infiltrated with blood corpuscles with no destruction of glandular tissue. Sometimes the stroma of the gland will be preserved, its cells being replaced by blood.

ETIOLOGY.

So many theories have been advanced to account for suprarenal hemorrhage that we are led to conclude that little is positively known of the etiology. However, there is one theory on which all the investigators agree, and that is that a weakness of the venous walls is responsible for the hemorrhage, but they do not agree as to the cause of this weakness. Milroy[6] and Demelin[7] believed it was a congenital weakness, while Still[5] and Lewes[8] consider that it was due to the pathologic condition of the vessels, such as fatty degeneration, which has never been found in the blood vessels, though Fiedler found it in the glandular tissue.

Mattei[1] advanced the theory that the compression of the inferior vena cava between the liver and the spine during the uterine contractions caused a damming back of the blood into the adrenal, especially during difficult labors. Hutinel[9] and Droubaix[10] agree with this theory, adding that thrombosis may also cause the damming back. Demelin[7] also supports these ideas and advances the theory that the congestion of the internal organs attendant upon the establishment of breathing in the newly born especially affects the adrenals due to their saccular structure and intimate relation to the vena cava.

Spencer[3] thought the weakness was only a normal delicacy of the vessel walls or possibly due to syphilis; he agrees with Mattei that the squeezing of the blood into the glands is an important factor, especially apt to occur in forceps operation or versions. Most of his cases required some kind of interference to complete delivery, a majority being delivered by the breech.

In this series of 119 cases eight versions are recorded, eight forceps deliveries and nine breech presentation; labor was induced once and cephalotripsy resorted to four times. Rayer[11] believed in the normal fragility of the vessels and thought the lack of firmness of the medulla a factor. Von Kirvisch[12] asserts that ligation of the cord will produce congestion and hemorrhage and prolapsed cord reported in two cases and cord around the neck reported in four cases may do the same thing. All these theories are based on the supposition of the existence of passive congestion.

Arnaud,[4] however, has proved by his extensive histologic studies with Alezais that it is not necessary to assume a morbid weakness of the vessel walls to account for the hemorrhage. The anatomic arrangement of the blood vessels in the internal cortical zone makes bleeding easy; histologically this zone belongs to the cortex, but differs from it in the reticulated arrangement of its cellular elements, and it is much more vascular, the vessels forming a chasm-like network, which Arnaud calls the vascular reticular zone because of the disposition of the epithelial rows and the predominance of capillary vessels which give, by their frequent anastomosis, a cavernous aspect. To the naked eye this zone appears as a brown line between the cortex and medulla, which is due to the vascular network filled with blood and not to pigmentation. This zone is the softest of the gland, being formed of cellular trabeculæ and of a great number of anastomosing capillaries which form by their amalgamation blood pools which break easily, not alone because of the normal delicacy of the vessels, but because they lack the support of the gland substance, the epithelial cells being scattered about in the little islands. Only the very large hemorrhages have their origin in the large efferent veins. In no case has a pathologic condition of the blood vessels been demonstrated; even in Fiedler's case of extensive fatty degeneration the vessels were not involved. Therefore, it seems that Arnaud's anatomic explanation is sufficient to account for the ease with which the vessels break, without assuming that a diseased condition of the vessel walls exist. Syphilis has been advanced by some as a

4. Arch. gén. de méd., July, 1900.
5. Obstet. Soc., London, 1898.
6. Am. Jour. Obstet., July, 1884.
7. Tralt. des mal. de l'enf., Paris, 1897.
8. Tr. Obstet. Soc., London, 1891.
9. Thes. de Paris, 1877.
10. Thes. de Paris, 1887.
11. Jour. l'Experience, 1837.
12. Oesterreicher med. Wchnschr., 1842.

cause, but no case could be considered syphilitic unless Fiedler's two cases of fatty degeneration were.

Spencer believed that infection was an etiologic factor, and the course which many of the cases have run have been so typical of infection that the infectious origin of the trouble was advanced almost from the beginning of the investigations. Additional weight is given this theory by the fact that other hemorrhages of the new-born are caused by infection. Klebs[13] and Gaertner[14] isolated germs in hemorrhage of new-born; Merceles,[15] Weigert, Brehn,[16] Kilham,[17] Babinski[18] and Dungeen[19] confirmed these findings, some isolating one germ and some another. The fact that von Ritter was able to entirely do away with hemorrhage in three newborn at the Prague Foundling Asylum Hospital by establishing larger and more sanitary wards also lends color to the infectious origin. The fact that nearly all of the cases occurred in maternity hospitals is also circumstantial evidence in favor of infection. Both of our cases died in the same children's ward of a general hospital.

The case is further strengthened by the results of experimental inoculation of animals. Roux and Yersin[20] obtained visceral hemorrhage, including the adrenals, in guinea-pigs, pigeons and rabbits by injecting the diphtheria bacillus under the skin. Langlois and Charrin[21] obtained the same results with the bacillus pyocyaneus and also with its soluble bacterial toxin. It is of particular interest to us that Roger,[22] by inoculating guinea-pigs with the bacillus of Friedlander, the germ found in both our cases, discovered that the suprarenals were hemorrhagic and occasionally were entirely filled with blood.[1] Pilliet[23] obtained the same results by injecting the essence of cloves into rabbits and guinea-pigs, thus demonstrating that any toxemia might produce hemorrhage. Eight cases in Hamill's series, including his own three, certainly point strongly to infection as a cause of the lesion. Six cases in this series also favor an infectious origin with five others which are possibly due to that cause.

We certainly have good presumptive evidence that suprarenal hemorrhage is due to infection; unfortunately, however, the direct evidence is very meager. The cases of gangrenous varicella and bronchopneumonia can logically be considered infections. Spencer[24] also reports a positively infectious case in a child dying eighteen hours after birth of septicemia contracted in utero. The only cases in the combined series in which positive bacteriologic findings have been found are the four cases in which Riesman obtained pure cultures of the *staphylococcus aureus* and *albus* from the blood and tissues; two cases in which Hamill and Dudgeon[25] found the same germ; a case of Dudgeon's in which pure cultures of the pneumococcus were isolated, and our two cases, in which pure cultures of the Friedlander bacillus were found. Therefore, it seems that the case histories the positive proof of Klebs, Brehn, Merceles, Gaertner and others, that infection does produce hemorrhage in the newborn; and the incontrovertible experimental evidence that positive isolation of micro-organism from seven cases proves beyond question that infection is at least one of the causes of suprarenal hemorrhage.

Hamill, in summing up this phase of the subject, says: "I am inclined to believe that if complete histologic and bacteriologic studies had been made in other cases that striking evidence of a toxic origin would have been found. If such a course be applied to all future investigations it will doubtless be shown that this is not only possible, but by far the most common cause." It is interesting to note that in the four cases of this series in which Hamill's advice was followed bacteria were found.

Langmead[26] and others have thought that the hemorrhage might be due to a specific germ. This will not be found to be true because hemorrhage of suprarenals has been experimentally produced by several different germs. Six different investigators, working on hemorrhages in the newborn, found six different germs, and the idea is positively disproved by Riesman, who found the *staphylococcus aureus* and *albus*, and by Dudgeon, who found pneumococcus, and by our cases, in which the pneumobacillus of Friedlander was found. Hemorrhage may be the result of any one of a number of infections, though certain germs will be found more often than others. The port of entry has not yet been determined, and it is possible that the infection may enter by the cord, the buccal cavity, the tonsils, the pharynx, the alimentary tract or the lungs.

Analyzing the many reputed cases, we find that in reality there are only three fundamental etiologic factors: first, weakness of the vessel walls; second, passive congestion caused by difficult labors, asphyxia, convulsions or anything which would favor venous stasis; third, infection. Following infection there is an active congestion of the suprarenals resulting from the functional superactivity of the gland in an attempt, presumably, to perform its supposed antitoxin rôle in the presence of infective agents or their toxins. Sajous thinks the hemorrhage is due to insufficiency caused by paralysis of the gland tissue by toxins. The important rôle of the suprarenals naturally suggests the query: What effect has suprarenal hemorrhage on the body economy? If these glands be removed or their vessels ligated, death follows quickly. It seems probable, then, that a destructive hemorrhage, even if not large enough *per se* to cause death, may kill because of intoxication following a cessation of the suprarenal function. Just how this occurs remains for physiologists to determine.

SYMPTOMS AND DIAGNOSIS.

There are no symptoms which point directly to the adrenals, although there may be a suspicion of adrenal bleeding if a new-born baby, evidently suffering from infection, suddenly blanches and dies in collapse as if from an internal hemorrhage.

TREATMENT.

There is nothing to be said of treatment, except that improvement in asepsis in hospitals may prevent the infections which lead to hemorrhage in the new-born.

SUMMARY AND CONCLUSIONS.

1. Hemorrhage of the suprarenal capsules is more common than hemorrhage in the other viscera.

2. This is due primarily to the close relation of the adrenals to the vena cava, making congestion easy, and

13. Boston Med. and Surg. Jour., December, 1891.
14. Arch. f. Kinderheilk., 1895.
15. Med. Rec., May 21, 1903.
16. Centralbl. f. Kinderheilk.
17. Arch. of Pediat., 1899.
18. Virchow's Arch., 1889.
19. Centralbl. f. Bact., 1893, p. 547.
20. Annales de l'Inst. Pasteur, June, 1889.
21. Soc. de Biol., 1893.
22. Soc. de Biol., 1893.
23. Le Progrès Méd., 1894.
24. Tr. London Obstet. Soc., 1891.
25. Am. Jour. Med. Sc., 1904, p. 134.
26. Lancet, London, May 28, 1904.

to the peculiar anatomic construction which favors hemorrhage.

3. A weakness of the vessel walls, either normal delicacy or pathologic alteration favors the rupture.

4. The place of election of the hemorrhage is usually in the internal cortical zone because of its vascularity and the anastomotic arrangement of the vessel.

5. The bleeding always follows active or passive congestion.

6. Passive congestion may be caused by difficult labors, obstetric operations, thrombosis, or, in short, anything that would favor venous stasis.

7. Active congestion is induced by infection or any toxemia which incites hyperemia by a supercractivity of the gland.

8. The findings of the pneumobacillus of Friedlander in the two cases reported here and other bacteria in five additional cases proves beyond question that infection is a cause of adrenalin hemorrhage.

9. Death results either from loss of blood or an interference with the physiologic function of the gland.

CASES FROM LITERATURE.

DUDGEON:[26] **Female, age 2 years and 8 months. On admission, very ill; temperature 101 F.; abscess on left side of neck; double otorrhea. Had frequent screaming "fits" but no convulsions. Child grew rapidly worse; temperature 103 F.; semicomatose. There was purpura on left leg.**

Autopsy.—Thrombosis of the superior longitudinal sinus and the cerebral and cerebellar veins; extensive purpura; hemorrhage in left adrenal and left kidney; thymic abscess. Staphylococcus aureus and albus cultivated from the heart's blood. The left adrenal was a coffee colored mass; no hemorrhage in the surrounding tissue.

Microscopic Examination.—There were numerous hemorrhages all through the medulla of the left adrenal. The capillaries were over distended and in many places the walls of the blood vessels were ruptured. This case, though not a young infant, is reported because of the positive bacteriological findings which are so rare.

DUDGEON:[26] **Female, age 1 year and 10 months. Gangrenous varicella; tubercular mesenteric glands, tuberculous ulceration of the intestines; double adrenal hemorrhage. Pure culture of pneumococcus from heart's blood and adrenal glands. The parenchymatous tissue was wholly replaced by a blood clot; the capillaries were engorged with blood.**

DUDGEON:[26] **Male, 14 months old. Bronchopneumonia, sudden death; double adrenal hemorrhage; other abdominal organs healthy. The whole of the adrenal medulla was composed of blood clot. The capillaries of the medulla and cortex were greatly distended.**

TALBOT:[27] **A well nourished child, 5 months old, with severe abdominal pain, vomiting and in convulsions. Autopsy showed double adrenal hemorrhage.**

TALBOT:[27] **Five-months-old child suddenly seized with abdominal pain, vomiting and convulsions. Temperature 101 F. Double adrenal hemorrhage.**

RIVIERE:[28] **Reported four cases all under 1 year. They had vomiting, diarrhea and fever. Death occurred within 48 hours, except in one case, in which it came within 12 hours. All showed hemorrhage of suprarenal capsules.**

LITTLE:[28] **Reports the case of a child, aged 4 months, with purpuric eruption. Death occurred 24 hours after the onset of the illness with hemorrhage in both adrenals.**

LITTLE:[28] **Male child, 13 months old, with diffuse purpuric eruption, convulsions, cyanosis and a fever of 108 F. just before death, which took place 24 hours after the child was taken sick. There was a large hemorrhage of the right adrenal. The left adrenal also showed numerous hemorrhages.**

STEFFEN, quoted by Aurand:[2] **Child, 7 days old, was operated on for a hare lip. Died because of diarrhea and insufficient nutrition. There was hemorrhage in both adrenals with putrid transformation.**

LANGMEAD:[29] **Baby, aged 3 days. On morning of third day, the breathing became grunting in character and the child moaned; the same evening he had a convulsion and blood ran from the nose and mouth and he died in half an hour. Neck, face and head were covered with purpuric eruption. The internal organs were all normal except the lung and the suprarenals. The lower lobe of the right lung contained a large hemorrhage which could be traced up into the trachea and larynx and was evidently the source of the blood seen internally. Both suprarenals were hemorrhagic.**

LANGMEAD:[29] **Boy, 2 months old. Purpuric eruption on face, chest and abdomen. At postmortem nothing was found except the purpura and suprarenal hemorrhages. They were distended with blood.**

LANGMEAD:[29] **Girl, aged 7 months. Awoke screaming at 3:30 a. m.; temperature 99.2 F. At 6 p. m. the temperature was 104 F. and she was covered with an intense purpuric eruption. She died 22½ hours after her first screaming fit and 12 hours after the purpura had appeared. Postmortem there was nothing found but the purpura and hemorrhage of the adrenals which were two masses of black blood clot, nearly half the size of the kidneys themselves.**

PICK:[30] **One of twins. Labor very difficult. First child was breach. After three hours, second child. L. O. A.; version failed; then child was delivered with high forceps; asphyxiated but breathed after hour and a half effort at resuscitation. Born at noon. At 5 a. m. next day the nurse noticed second child had stopped breathing. Autopsy showed diffuse hemorrhagic discoloration in liver; right adrenal showed hemorrhage the size of a dime. The left adrenal also contained blood.**

ANDERSON (quoted by Pick[30]): **A child, 15 months old, died of suprarenal hemorrhage, which he attributed to acute toxemia, probably infectious.**

ABT:[31] **Reports two cases of small hemorrhages in the suprarenals incidental to more serious hemorrhages in other organs.**

HAMILL:[32] **Reported a case dying on the seventh day from an acute infection. The right adrenal was congested and the left hemorrhagic. The suprarenal condition in this case was of minor importance and only incidental to other important findings. Cultures showed staphylococcus pyogenes aureus from heart's blood, umbilical cord and lungs.**

WOOLLEY:[33] **Girl, 11 months old, had measles. Hematoma in right renal region the size of a goose egg; right adrenal embedded in mass and showed no sign of rupture. The hemorrhage did appear to have come from the gland though its source was not ascertained. The gland was slightly enlarged and firm, almost black, central vein obstructed apparently by thrombi. Microscope showed tissue of gland seemed to have been completely replaced by hemorrhage except for a few nuclei. The thrombus was a laminated fibrinous one, no bacteria.**

LIEUTAUD:[34] **15 days died after three days of convulsions. Adrenals a little larger than eggs of pigeon. In the interior is an irregular cavity containing an inky liquid.**

PETIT: **Boy delivered with forceps; bronchopneumonia; right adrenal was transformed into a large hematic cyst.**

COLEMAN:[35] **Child, 10 months old, admitted to hospital with acute fever of a day's duration and a bullous eruption which had been present only a few hours; there were a few purpuric spots. The child died about an hour after admission; autopsy performed a few hours after death showed diffuse interstitial hemorrhage. Cultures were made with negative results.**

HENGGE:[36] **A child, weighing 2,200 gm., had, on account of a contracted pelvis, been delivered by podalic version. The child was asphyxiated but was resuscitated by Schultze's method; when thirty hours old icterus appeared and it died on the three days old. Autopsy showed beside numerous ecchymoses of the pleura, pericardium and peritoneum extensive hemorrhage in both adrenals especially between the capsule and the cortex.**

OSER:[37] **Child died after a very difficult artificial breech delivery, was in asphyxia pallida. Autopsy, extensive bleeding in abdominal cavity through a rent 1 cm. long in capsule of the liver. Both adrenals were reddish blue tumors the size of a walnut. The microscope showed that the medulla was completely destroyed and only small fragments of the cortex were left.**

OBERNDORFER[38] **(Case of Kleinschmidt and Romme): Hpara with contracted pelvis. The extraction of the thorax was very difficult. Schultze's methods employed for asphyxia. On the fourteenth day child died of weakness and icterus.**

Autopsy.—**Both suprarenals almost as large as kidneys, reddish brown in color. The microscope showed that almost all of the suprarenal substance was destroyed. The case is interesting because the child lived ten days after the hemorrhage as was shown by the clot, and we are justified in concluding that the child died from cessation of the suprarenal function and that it lived as long as it did because not all of the gland substance was destroyed. Oberndorfer called it a case of acute Addison's disease.**[38]

ABSTRACT OF DISCUSSION.

DR. S. M. HAMILL, Philadelphia: Hemorrhage into the suprarenal capsule is usually a manifestation of some form of infection in the newly born, and, as has been said, any one of a number of infections may produce these hemorrhages. From an extensive experience in autopsy work in the newly born, I believe that hemorrhage into the suprarenals is very common and that the evidence is sometimes microscopic instead of macroscopic. I have found some degree of hemorrhage in infections due to the streptococcus, staphylococcus, pneumococcus, *Bacillus pyocyaneus*, the colon bacillus and a micrococcus I was unable to classify. We may have infections with the pneumococcus without any evidence of pneumonia. Another striking feature about these cases is the early period of life at which the symptoms develop. The earliest manifestation in one of Dr. Litzenberg's cases was some disturbance of the stool. This has been a very early and usually the first symptom in my own cases, and suggests that the gastrointestinal tract may be the channel of infection in some cases.

DR. ABRAHAM JACOBI, New York: It makes me sad that there are not five times as many men and women present to

27. St. Bartholomew's Hosp. Rep., 1900.
28. Tr. Path. Soc., London, 1902.
29. Brit. Jour. Dermatol., 1901, p. 451.
30. Med. News, May 13, 1905.
31. THE JOURNAL A. M. A., Jan. 31, 1903.
32. Arch. Pediat., September, 1903.
33. Montreal Med. Jour., June, 1902, xxxi, 435.
34. Thes. de Paris, 1896.
35. Lancet, London, May 7, 1898.
36. Münchner med. Wchnschr., 1904, No. 48.
37. Wiener klin-therap. Wchnschr., June 18, 1905.
38. The following references may also be consulted:
Routier: Soc. de chir., 12 December, 1894.
Voelker: Path. Rep. Middlesex Hosp., 1894.
Andrews: Tr. Path. Soc., London, 1898.
Merkel: Ziemssens Cyclop., 1878, Vol. viii.

hear this paper. It is a fact that many babies die during their first week. I have seen many cases and have attributed death to meningeal and cephalic hemorrhages, which were demonstrated by the autopsies. I could account for them only on the ground of a weakness of the vessel walls and the shallowness of the impressiones digitatæ of the interior of the skull, and the injuries caused to the head during labor. Dr. Litzenberg explains many things, but there is one thing more that I want him to find out: why the infants die so suddenly. What is it that the suprarenal capsules do that these babies should die so suddenly while comparatively well? What is the influence of the suprarenal capsules on the splanchnic nerve that causes this sudden anemia and sudden death as from shock? I wish Dr. Litzenberg would communicate with two physicians in New York who have been investigating the cause of death in a woman of 45 who died very suddenly as from hemorrhage. The case was that of Dr. Bierwirth of Brooklyn, and Dr. Brooks and Dr. Ewing of New York have the case under consideration. The woman died suddenly as if from hemorrhage. The upper extremities, head and trunk were extremely anemic; all the blood was in the lower extremities. There was hemorrhage into the subcutaneous tissue, the suprarenal capsules and into the muscles, which were soft and pulp-like. Now, is there really some connection between the sudden death and hemorrhage into the suprarenal capsules? The field is fairly new and Dr. Litzenberg seems to be the one to go on with the investigation of this subject.

DR. S. MARX WHITE, Minneapolis: The smaller adrenal hemorrhages give a beautiful opportunity to study the relation between hemorrhage and necrosis. A little closer study will, I think, bear us out in the belief that the hemorrhage is due to the infection. There were small foci in the suprarenals that macroscopically did not indicate hemorrhage, but microscopically we found in the zona reticularis a tremendous congestion; the hemorrhage takes place in the zones of necrosis. I have seen two cases which are interesting in this connection. One was an endocarditis in a child who developed a temperature of 104 or 105 F. twenty-four hours after birth. At the autopsy, five days after birth, fibers were found at the pulmonary valve. In another case the child died on the fourth day and we found multiple foci in the lung and isolated an organism similar to, but I believe not identical with, the bacillus of diphtheria.

DR. JENNINGS C. LITZENBERG, Minneapolis: One of the most striking features of Case 1 was the melena, which, being due to infection, would make this case worthy of report even if there were no other conditions to attract our attention. The manifestations are indeed early; I believe that in Case I they were even earlier than I can report, on account of the nurse's failure to take the temperature on the day preceding the high temperature first recorded. I think that the extensive studies of Arnaud on the histology of the suprarenals shows definitely why the vessels break. These babies do not all die suddenly, as will be shown by the report of one of the cases collected from the literature in which there was a small hemorrhage and death was deferred, leaving us to infer that possibly a hemorrhage that is not large enough to kill by loss of blood may be sufficient to interfere with the function of the gland and cause death in that way.

Good Army Camp Sanitation.—The sanitary results accomplished by the work of the Army Medical Department at the camp of instruction near Indianapolis, recently terminated, are described by Dr. John J. Kyle in the *Indiana Medical Journal* for October. He alludes to the system of camp sanitation adopted, by which all excreta and solid garbage were completely destroyed daily by incineration and the liquid garbage disposed of by immediate evaporation or by purification in a septic tank. No serious sickness occurred, although the command averaged 6,500 men and the camping period covered over one month. Not a case of typhoid fever or dysentery originated in camp and diarrheas were rare and mild. There was an average daily sick report or less than 0.5 per cent., and it may be truthfully said there was an absolute absence of sickness due to avoidable causes.

A DISORDER DUE TO EXPOSURE TO INTENSE HEAT,

CHARACTERIZED CLINICALLY CHIEFLY BY VIOLENT MUSCULAR SPASMS AND EXCESSIVE IRRITABILITY OF THE MUSCLES. PRELIMINARY NOTE.

DAVID L. EDSALL, M.D.
PHILADELPHIA.

In 1904 I described[1] two cases that I saw in the men's wards at the Episcopal Hospital, in which remarkable muscular spasms occurred after exposure to severe heat. These patients presented none of the conditions ordinarily recognized as due to heat; there were, indeed, no symptoms of any moment, aside from the extremely striking muscular disturbance, except that both patients were slightly constipated and one had nausea and slight vomiting. The muscular spasms, however, were of a remarkable character, and in some of their details they appeared to be sufficient to distinguish the cases from other conditions of spasm that are recognized, whatever their cause.

One of the most striking features was a very conspicuous degree of fibrillary contraction, particularly in the muscles of the calf. This was of continuous occurrence, except during the frequent interruptions caused by the most marked of all the symptoms, namely, severe tonic spasms. The latter lasted for from half a minute to a minute each time they occurred and were exceedingly painful. They involved the muscles of the forearms and legs severely, but were also violent in the abdominal muscles. There was, indeed, a mild grade of continuous or nearly continuous tonic spasm of the latter muscles.

In their gross features the tonic spasms somewhat closely resembled tetany, except for the pronounced involvement of the abdominal muscles; but Chvostek's, Trousseau's, and Hoffmann's phenomena were absent. The most striking characteristic of all was the extreme irritability of the muscles to direct stimulation. While the spasms occurred spontaneously with great frequency, they were at once excited in the intervals of quiet by any attempt at voluntary use of the muscles or, frequently, by anything that led involuntarily to contraction of the muscles; and ordinary moderately deep palpation of the muscles most involved, a light tap on them, or the weakest faradic current that could be used, immediately produced locally a severe spasm, the pain of this usually leading involuntarily to contraction in other muscles, and the latter being immediately succeeded by painful and more or less general spasms in the extremities and in the abdominal wall.

The spontaneous spasms were almost entirely over within twenty-four hours or a little more, and no symptoms then remained except slight exhaustion and some muscular soreness. Slight spasm, however, could still be produced for a day or two longer by mechanical or electrical irritation, and tapping or sudden palpation still produced a very abnormal degree of fibrillary response.

The superficial reflexes were not exaggerated, and there was no Babinski phenomenon. The tendon-jerks were not excited, though the muscular contraction producing them tended in the period of greatest excitement to set up tonic spasm, as did any other muscular contraction. Sensation of all qualities (touch, pain and temperature) was normal, as were the sphincters and

1. Am. Jour. Med. Sc., December, 1904.

the pupils. The only sensory disturbance was a slight tingling in the extremities after the spasms. The respiratory and cardiac rhythms were regular, and there were no cerebral symptoms. The temperature in one patient was slightly elevated, in the other about normal. I consider the muscular contraction to be due to disorder of the muscles themselves or the terminal nerves.

These cases were at that time extremely puzzling to me; but, since the attacks in both instances appeared to be closely associated with exposure to a high temperature, and since in one man they had repeatedly occurred before as the result of the same apparent cause, I described them as probably due to heat. I was unable to find in medical literature any mention of heat as a cause of myospasm (except, of course, the convulsions that frequently occur in heat-stroke, as a consequence of the disorder of the central nervous system), and I could find no description of any disorder that had the remarkable clinical characteristics displayed in these cases. Therefore, I looked on them as interesting curiosities, but as of little importance beyond this.

In 1907, however, while serving in the same wards (having served, in two of the three intervening years, in the women's wards), I saw again, during the hot weather, two cases of the sort. The spasms in these were less severe and they presented no noteworthy fibrillary contractions, but they had the same remarkable muscular irritability. I reported these at the last meeting of the Association of American Physicians, and also made note of the fact that I had inquired among various physicians who see a great many men employed in occupations that entail exposure to intense heat, and that these physicians had all repeatedly seen such cases, many of which had been very severe and some even fatal. I found, too, that the men themselves who are engaged in such occupations, as well as their employers, are extremely familiar with the disorder, and state that it is very common and that they have long considered heat to be the main cause of it.

So far as I have yet gone in studying the effects of various occupations, the attacks appear to occur with a frequency that is in direct proportion to the severity of the exposure to heat and to the degree of muscular labor performed by the men; and in some kinds of work, especially that performed by certain of the ironworkers and by the men employed in the firerooms of vessels, both in the merchant service and in the navy, the number of persons that suffer in this way is surprisingly large. The cases are frequently very severe, and fatal cases occasionally occur—a very noteworthy series of deaths all told, having been related to me by various physicians, and a still larger number by the workmen, some at least of the latter cases being certainly authentic.

Since my second report on the condition, in May last, I have had another case in my own wards at the Episcopal Hospital, and have seen, for other conditions, a considerable number of men who stated that they had had such attacks. I have also seen two other patients in the course of their attacks in the wards of the Pennsylvania Hospital, in the service of Dr. James Tyson. Dr. Longcope kindly directed my attention to these latter cases and helped me greatly in conducting some special studies of them. Both of these cases were severe, one extremely so.

Further inquiry has also confirmed and enlarged my knowledge of the more or less frequent occurrence of the disorder in various occupations; and a number of medical clinicians have informed me that they have undoubtedly seen it, some of them repeatedly, but have not recognized it. I have, in fact, seen the records of several cases that had been in hospitals under various indefinite diagnoses, but that appear from the records or from subsequent questioning of the patients themselves in regard to these attacks to have been almost certainly cases of this disorder. Furthermore, it undoubtedly may occur from ordinary exposure to a high atmospheric temperature in summer. One of the most striking of my own cases developed in a man whose occupation kept him on the street. How frequent this is, however, I can not state.

The disorder appears to be, therefore, a condition that is likely to be met with occasionally in the course of a general medical experience, and one that occurs in a considerable number of occupations with sufficient frequency and severity to be of very distinct importance, especially to those whose practice lies chiefly among persons whose occupations make them particularly liable to exposure to intense heat. Nevertheless, so far as I have been able to learn by a search through most of the important text-books and monographs dealing with myospasms or with conditions due to heat, and likewise so far as I have been able to determine from a study of suggestive titles of articles under various headings, it seems to have escaped recognition in medical literature, except for a brief note by Myers[2] that I have found since my first report, and a recent paper by Elliott. In Myers' article the very frequent occurrence of more or less generalized cramps in ships' stokers is commented on, and the relation of these to either heat or alcoholism, or both, and especially to the drinking water, is suggested. The paper[3] of Elliott also records the frequent occurrence of violent muscular spasms in the men employed in the firerooms of vessels (in this instance in the navy), and reports a fatal case, with autopsy, in which no gross lesions of any importance were found except congestion of the kidneys. This latter lesion, for reasons that I shall indicate in a more extensive paper, is, I think, unquestionably secondary to the main disturbance. Elliott notes the difference between these cases and those of ordinary heat-stroke or heat-exhaustion, and believes that they constitute a type peculiar to heat cases on board ship. This, however, as I have already indicated, is a misapprehension. The cases that I reported in 1904 were both in men occupied on land, as were those that I have personally seen since; and I have, as I stated, determined that it occurs in a variety of occupations.

Several officers in the naval medical service have informed me also that some years ago the disorder was repeatedly commented on in reports to the surgeons-general from the medical officers of various ships; but that in recent years, especially since these reports from ships have been published in the Reports of the Surgeon-General, it has usually been passed over or, at most, mentioned only casually, because it is such an old story to officers. Dr. Gatewood has, however, kindly pointed out to me such a report by Beyer, in 1906, in which the general severity and the main characteristics of the spasms are described and the frequency of the

2. Virginia Med. Semi-Monthly, Dec. 24, 1897.
3. Mil. Surgeon, March, 1908.

occurrence of the disorder is emphasized. No better evidence of the lack of a general recognition of the existence of such a condition and of any available description of it can be found than the fact that, while a large proportion of naval medical officers with whom I have discussed the matter are very familiar with the disorder, a number of others who have had extensive experience in the navy had, by some chance, never seen it or known of its occurrence. Dr. Gatewood tells me, however, that he now describes it in his lectures on hygiene to the students of the Naval Medical School as the most frequent form of disorder due to heat on naval vessels.

I have been unable, to be sure, to secure from any of those who have seen these cases a description more detailed than that there are painful muscular spasms, which in bad cases are exceedingly severe and may even be fatal; that these are not associated with any characteristic symptoms commonly recognized as due to heat; and that tonic spasms are always present, sometimes associated with the extremely striking and more or less continuous fibrillary contractions in the intervals between the tonic spasms that I described in my first case reports. These general features, however, together with the unquestionable close association with exposure to intense heat, are sufficiently peculiar and characteristic to show that the cases in the various occupations in which they occur are the same as those that I described in detail in my first paper and those seen since.

The condition has such peculiar characteristics clinically as to show that it is, of course, a different disorder from heatstroke, and clearly quite different from heat prostration. It appears also clinically to be different from any other recognized forms of muscular spasm. In the last two cases that I have seen I was able to make some studies of metabolism, which include observations of the urinary excretion of total nitrogen, ammonia, uric acid, creatinin, chlorids, phosphates, sulphates, total sulphur, calcium and magnesium. The conditions of metabolism that I found were extremely striking and essentially the same in the two cases; they have, so far as I know, no counterpart in any other conditions and are very different from any that have been observed in somewhat similar states of spasm.

These studies, together with a discussion of some other less important observations that I have made regarding the pathogenesis of the disorder and a more detailed description of it and of the occupations that give rise to it, so far as I can determine their number, I shall publish in a more extended paper in the *Archives of Internal Medicine* when I can get them completed. At present I would mention that the condition of metabolism, together with the clinical features, indicate that it is an individual disorder, and it seems extremely probable that it is due to an acute degenerative process in the muscles. Aside from the peculiar interest of this latter point in relation to this particular disorder, it is of such interest in relation to various clinical and physiologic problems in metabolism that it is highly desirable that portions of muscle be secured for purposes of study. It is largely for this reason that I publish this note. I trust that I may accomplish this myself; but I hope also that those who not infrequently see these cases may do so, either by obtaining some muscle from a fatal case or by removing a portion under local anesthesia during or immediately after an attack.

1432 Pine Street.

Clinical Notes

TRAUMATIC PNEUMOTHORAX.

W. L. MOSS, M.D.
In Charge of Research Laboratory of Phipps Dispensary, Johns Hopkins Hospital.
BALTIMORE.

The following case seems of sufficient interest to report because of its unusual mode of production, and of a curious difficulty in diagnosis:

Patient.—G. H. H., male, aged 49, married.

Family History.—Unimportant. The patient's father died of measles at 25 years. His mother died at 60; cause unknown. His only brother died of meningitis at 25 years of age after a sickness of four days. His wife is living and well. Two sons, aged 20 and 11 years, are living and well. Six children died in infancy at ages varying from 3 months to 4 years—one of diphtheria, one of bronchopneumonia and four of cholera infantum.

Past History.—Good. As a child the patient had measles, whooping cough and mumps; no other sickness except an attack of "shingles," seven years ago, which kept the patient in bed for three months. During this time there were repeated eruptions of herpetic vesicles over the right side and front of the lower thorax which were very profuse and discharged large quantities of "corruption." Since this attack the skin over the affected area "has a feeling of deadness," and it has been necessary to use a flesh-brush constantly to "keep up the circulation in this part of the body."

Present Condition.—The patient is five feet nine inches tall, weighs 190 pounds, and is of good habits; does not indulge in tobacco or alcohol. By occupation a wholesale grocer, he leads a sedentary life, and at the time of the accident was taking his first vacation in a number of years. While mountain-climbing he stepped on a smooth, wet rock; his feet shot out from under him and he sat down with great force. The patient says that the pain caused by the fall was very intense. It was located in the "small of the back," in the "pit of the stomach," and, in addition, "there was a sensation as if something had been jarred loose in the abdomen." For a few minutes he was unable to rise, but finally, with the assistance of his son, he got up and made his way up a steep path back to the hotel. The patient was first seen in consultation the day following his injury. He was lying in bed on his back, apparently suffering great discomfort. It was said that he had been unable to have a movement from his bowels or to empty his bladder since the accident. It was thought that perhaps some injury to the spinal column had been received, resulting in a lower cord lesion. A hasty examination revealed no disturbance of sensation in the lower extremities, rectum, penis, or anywhere over the body; nor was there any paralysis present. After the patient had been assured that there was no injury to the spine, about which he was apprehensive, he urinated spontaneously and his bowels were moved by enemata. A systematic examination was now undertaken.

Examination.—The patient's temperature was 102, pulse 120, respiration 30. No asymmetry of chest or inequality of movements was noted. Abdominal respiratory movements were well marked.

Lungs: Percussion note was dull over right upper front and back. The note over left front and back was resonant. Vocal fremitus was increased over areas of impairment. On auscultation the breath sounds in right upper front were harsh and blowing, and over the middle of right back they were definitely tubular but no râles were present. Auscultation of the left lung was normal.

Heart: The right border was not accurately defined. The left border extended 2 or 3 cm. to left of mammary line. The sounds were distant but regular in rhythm. No murmurs were heard.

Hypochondrium: In the right hypochondrium extending a hand's-breadth above the costal margin in the mammary line

and well around into the right side was an area of tympany which resembled gastric tympany. In the left hypochondrium in the region of the stomach the percussion note was flat.

Abdomen: This appeared natural; no unusual fulness; respiratory movements were good; no tenderness or masses were present and the liver could not be palpated.

Reflexes: Normal.

Special Examination: The patient complained of great pain on any movement of body. There were no contusions present. The spines of the vertebræ could be palpated; pressure over them elicited no pain. Pressure over lower ribs did not elicit crepitus or special pain. No injury to the pelvis could be made out. It was deemed unnecessary and inadvisable to make more extensive examination owing to the discomfort of the patient.

Diagnosis.—With the natural propensity for choosing the most difficult, instead of the simplest and commonest explanation of a given sign, a probable diagnosis of situs transversus was made and with difficulty left unexpressed. Feeling a strong desire to determine if a transposition of the abdominal viscera really existed, I asked permission of the attending physician to follow the case. The next day the patient was seen again. The area of tympany in the right hypochondrium persisted but there was the usual gastric tympany in the left hypochondrium which followed the normal outlines of the stomach, so that the thought of an anomalous position of the stomach and liver had to be abandoned. The patient's condition remained practically unchanged. Temperature was slightly lower but pulse and respirations remained elevated. The consolidation in right upper front and over middle of right back persisted. Râles, which had not been heard on the preceding day, were now heard. Diagnosis remained bronchopneumonia of traumatic origin. The intense pain which the patient suffered and referred vaguely to his back was ascribed to muscular strain or to some wrench given the back in falling. It remained to account for the area of tympany in the right hypochondrium. The possibilities considered were: 1, rupture of the intestine, due to the fall, with escape of gas, obliterating the liver dulness (the existence of any old adhesions about the intestine might have facilitated this result); 2, diaphragmatic hernia; 3, atony of the intestine, due to shock and consequent tympanites with obliteration of the liver dulness by the distended colon; and 4, pneumothorax. The first condition could be readily excluded, as the patient's condition at the end of forty-eight hours precluded general peritonitis. The temperature was falling, abdomen soft, respiratory movements good. Diaphragmatic hernia seemed improbable, especially as the right side of the diaphragm is protected to a considerable extent by the liver. Repeated auscultation over the tympanitic area failed to reveal any intestinal sounds. These, of course, might have been absent if the hernia had been strangulated, but the absence of signs of obstruction negatived the idea of strangulated hernia. Atony of the intestines with consequent distention, especially of the colon, might have given tympany in the right hypochondrium, but this would hardly have extended as high as a hand's breadth above the costal margin, obliterating entirely the liver dulness. The fact that there was no distention of abdomen, no marked tympanites and that there had been several movements from the bowels in the two days since the accident made it possible to exclude this condition at once. The patient was then examined with the view of determining if the condition was pneumothorax. The symptoms and signs in favor of pneumothorax were the pain, temperature, rapid pulse, and respirations, tympany, absence of vocal fremitus and breath sounds over tympanitic area; extent of the cardiac dulness to the left without anything to indicate or account for its enlargement. No tinkling râles were heard over the area of tympany; the liver could not be made out in a depressed position. The coin sound and succussion splash were not attempted on account of the discomfort caused by any examination requiring the patient to move his body. On the above grounds the diagnosis of pneumothorax was made.

Clinical Course.—It was with interest that the further course of events was watched for confirmation of this diagnosis. It was predicted that in the course of a few days the air in the pleural cavity would be absorbed, the lung expand again, normal liver dulness appear, and the left border of the heart move in toward the mid-line. By about the tenth day this had taken place. The percussion note over the entire right lung was resonant, resembling that over the left lung, the resonance extending down to about the seventh rib where the liver flatness began and continued to the costal border in the mammary line. There was no longer any tubular breathing and the only abnormality to be made out on auscultation was the presence of moist râles at the bases of both lungs behind, probably due to hypostasis. The left border of the heart was well within the mammary line. During these ten days the temperature gradually fell to normal, but the pulse remained high, ranging around 100, until the area of tympany entirely disappeared from the right side. During the course of the disease another consultant was called in and found that pressure over one of the lower ribs on the left side (contralateral to the pneumothorax) caused considerable pain, but no crepitus could be made out and at no time subsequently could any callus formation be detected. It seems hardly possible that there could have been a fractured rib, but even admitting the possibility of such, its existence on the left side could scarcely have produced a right-sided pneumothorax without causing symptoms referable to the left lung as well.

It seems possible that the pneumothorax may have been produced in the following way: The patient's feet slipped out from under him and he fell to a sitting posture. The sedentary life of the patient had probably led to an atonic condition of his muscles. His reaction time was slow so that the abdominal muscles were probably relaxed when he struck the rock on which he fell. The liver, a heavy organ suspended by its coronary ligament from the diphragm, being thus unresisted, caused a sudden depression of the diaphragm. At the moment of the fall the patient "caught his breath" (closed the glottis). The tug of the liver on the diaphragm was transmitted to the lung, which, owing to the suddenness of the pull and the inability of the air to rush in and permit of complete expansion, was torn. It is not necessary to suppose that there was closure of the glottis at the moment of the fall. In the event that there was free access of air the rupture of the lung may have been due to overexpansion of the lung when the diaphragm was suddenly depressed by the liver. If old pleural adhesions existed, the tearing of the lung might have been facilitated. Inquiry into the patient's past history, however, did not reveal anything definitely indicating a cause for pleural adhesions, unless they might possibly have been associated with the attack of "shingles" seven years previously, which he described as occurring on the right side and discharging much "corruption."

GASTROSCHISIS.

CHILD BORN WITH ABDOMINAL CLEFT.

C. B. FORSYTH, M.D.
ALEXANDRIA BAY, N. Y.

The following case is reported, not for its extreme rarity, but for the fact that the child lived for a day:

Labor.—Mother, aged 17, at no time manifested any abnormality. Labor came on at the eighth month of gestation. The membranes ruptured spontaneously, emitting a large amount of yellow tenacious fluid resembling the thickened bile from an infected gall bladder. The child was presented in left occipito-anterior position, but pains were insufficient to complete labor and forceps were used.

Description of Child.—The child was normal except the abdomen, which contained a cleft three inches long with the umbilicus as its center. The peritoneum was continuous with the skin at the margins of the aperture, and extruding therefrom were the stomach and the entire small intestine. There was no pulsation in the cord and no other sign of life. In order to make the child presentable for its parents' inspection I replaced the viscera and in so doing expelled a large quantity of the same yellow amniotic fluid from the mouth and nostrils.

Subsequent History.—After suturing, I resorted to artificial respiration and was rewarded by a feeble inspiratory movement. The child soon began to breathe regularly and cried lustily; the bowels and kidneys functionated several times and the child nursed, but kept up a whining cry until it died, twenty-six hours after birth.

A CASE OF SEVERE ANEMIA, PRESENTING BLOOD FINDINGS OF A PERNICIOUS TYPE: RECOVERY.

ROLAND HAMMOND, M.D.

PROVIDENCE, R. I.

The following case is reported because of the remarkable blood findings while the patient was under observation at the hospital, and because of the interval which has elapsed—now five years—in which no relapses have appeared, and during which time the patient has been in the best of health.

Progress of the Case.—At first, as the blood became depleted, the weakness, nervous and dyspeptic symptoms and headache became marked. With improvement in the blood, however, the general condition became much better. Toward the last of his stay in the hospital he complained only of headache and dim vision. A diarrhea began a few days after admission and lasted ten days. There was some fever, the temperature at times reaching 100 to 101 F. The urine was frequently examined and was always of a normal color, specific gravity averaging 1.015, containing a very slight trace of albumin, and a rare hyaline and finely granular cast.

The details of the results of the blood examination are given in the accompanying tabulated statement. The treatment is also given in this table.

TABLE OF BLOOD FINDING IN A CASE OF SEVERE ANEMIA.

Date (1903).	Hb. per cent.	Reds.	Whites.	Stained Smear.	Medication.
July 14.....	34	3,408,000	2.440	Well-marked poikilocytosis, a few megaloblasts, not typical, but transitional forms.	July 17, Fowler's sol. m. v.; Tr. Fer. Clor. m. x.
July 29.....	20-25				
August 3....	20	1,172,000	4.660	Marked poikilocytosis. High color index. No marked general increase in size. No blasts seen. Occasional red cells show basophilic granules.	July 31, Fowler's sol. omitted.
August 6....	15	644,800	3.200	Marked poikilocytosis. Color index relatively high. Slight general increase in size of red cells. More megaloblasts than normoblasts.	
August 8....	15	846,000	5.200	General increase in size of reds. Color index relatively high. Occasional blasts, normoblasts more common than megaloblasts.	Iron omitted. Fowler's m. i. Aug. 9, Fowler's m. iii.
August 11....	..	690,000	6,400	Marked poikilocytosis. Relatively high color index. General increase in size of reds. Moderate number of blasts, more normoblasts than megaloblasts.	Aug. 13, Fowler's, m. viii.
August 15....	15	168,000	3.200	Marked poikilocytosis. Color index high. Slight general increase in size of reds. Occasional normoblast.	Aug. 17, Fowler's, m. xii.
August 19....	20	876,000	5,800		
August 24....	35	1,088,000	3,320	Moderate poikilocytosis. General increase in size of reds. No blasts seen.	Aug. 22, Fowler's, m. xvi. Aug. 24, Fowler's, m. xviii.
September 1..	38	2,260,500	5,000		
1904.				Counts made in summer of 1904 and stained smear in September, 1904, showed approximately normal blood.	
1903.					
May 29.....	85-90	5,160,000	7,800	Red cells normal in color, size and shape. Differential white count negative.	
1908.					
July 10.....	85	4,101,000	7,100	Red cells normal in color, size and shape. Differential white count was negative.	

I am indebted to Dr. Edmund D. Chesbro, visiting physician to the Rhode Island Hospital, for permission to report this case. The careful and complete blood examinations during 1903 are by Dr. Albert A. Barrows.

Patient.—S. McC., a carpenter, aged 46, born in Nova Scotia, entered the Rhode Island Hospital July 14, 1903, suffering from a severe anemia.

History.—Two and a half years previously he had a severe attack of diarrhea, followed by malaria lasting three months. Since then he had not felt so well as formerly and his color had not been so good, though he worked for one year after this illness. Five months before entering the hospital he had influenza and was ill for three weeks. Since then he had failed gradually in strength and at time of entering hospital complained of great weakness, dyspnea, dizziness, ringing in the ears, blurred vision and failure of eyesight, and a feeling as if hot steam were being placed on his neck and the back of his head. Two years before he was seen he had been kicked by a horse in the left lower back and side, and had a "catching" pain there at times since then. Had had "rheumatism" in the right knee twenty years ago. His habits were good and he denied venereal disease. His father and grandfather died of heart disease.

Examination.—He was a well-developed and well-nourished man of large frame with skin and conjunctivæ pale and yellow-tinged. The mucous membranes were very pale. The heart was not enlarged, but a soft, blowing, systolic murmur was heard at the apex, not transmitted. The lungs gave a few fine, crepitant râles at both bases behind. The liver and spleen were not enlarged. There was some edema of the legs. The knee-jerks were active.

This case is remarkable for the severity of the anemia with recovery. The blood examination shows the rapid variations of the disease. This case shows the third lowest red count on record, and is the only case in which the patient has lived more than a few months. Quincke reported a case in which the red cells dropped to 143,000 per c.mm. The count later rose to over 1,000,000 and the patient lived several months. Hills[1] reported a case in which the red cells reached the low count of 155,280 per c.mm. The patient lived only a few weeks. The low count in the case here reported was 168,000, and the return of the blood to normal was unusually rapid.

266 Benefit Street.

1. Boston Med. Surg. Jour., Dec. 1, 1898, p. 542.

Skin Diseases in Children.—W. B. Brown, in the *American Journal of Obstetrics*, states that skin diseases in children differ little from those observed in adults. Children, however, not being subjected to various occupational and trade influences, do not suffer from diseases due to irritation. They seem more susceptible to pus infection; therefore, secondary infection must be borne in mind and, in fact, looked for in making a diagnosis.

Therapeutics

CARDIAC DISEASE.

A woman, aged 63, of normal weight, on Sept. 11, 1908, complained of her legs feeling weak and of breathlessness on going up stairs or walking. "The knees give out," she says. She also had dyspnea on any exertion. She looked well, her appetite and digestion were good, the bowels acted normally, the pulse was 85, rather weak and of low tension, though the arterial walls showed some hardening. The heart was slightly enlarged and the sounds were not normally loud. There was a constant rough, systolic blow at the base, which was transmitted up the aorta, showing a narrowing at the aortic orifice. The urine was negative, of rather low specific gravity, and the amount about normal. There was no edema or signs of loss of compensation other than the dyspnea.

The diagnosis was general arteriosclerosis with low blood tension due to weakness of the cardiac muscle, especially of the left ventricle, with a sclerotic condition of the aortic valves.

The treatment was to do as little walking as possible, to go up stairs only when absolutely necessary, and then slowly, and to take five drops of the tincture of strophanthus, in water, three times a day, after meals.

September 16.—The patient feels better and breathes better, and the pulse tension is greater than when last seen. Lest the heart be too much stimulated or the blood pressure too much raised in this arteriosclerotic condition, the strophanthus was reduced to four drops, in water, three times a day, after meals.

September 23.—The patient says she feels stronger, but still is breathless on going up stairs, and the pulse is again soft and weak. Her general condition is excellent. She is now to take six drops of the tincture of strophanthus, in water, three times a day, after meals.

October 12.—Her strength has now improved. She can walk better and go up stairs without much dyspnea, but she awakens in the middle of the night (and has done this for ten days) with distress, which she refers to the chest, and thinks perhaps may be due to gastric flatulence. She gasps for breath for several minutes, and feels at times, she says, "as though I would die." On her own initiative she stopped the strophanthus drops, thinking they might be causing the condition, but she found these dyspneic attacks occurred the same as when she was taking the medicine. In spite of these night attacks of asthma, as she calls it, she is stronger to walk and to go up and down stairs. Her pulse was 96 and still weak (she had stopped the strophanthus for two days). With the heart acting weakly and the blood tension low, it is impossible to tell whether this heart needs extra stimulation in the way of a strong cardiac tonic or whether vasodilation is needed to relieve the pressure ahead, even if the blood tension is low. Consequently, first to test the need of the heart, she was given a fat-free tincture of digitalis (the fat-free being less likely to disturb the stomach) in a dose of five drops, in water, three times a day, after meals.

October 14.—She had a very bad attack of asthma and cardiac depression last night. The pulse is reduced to ??, but is still weak in spite of the digitalis. Evidently the digitalis thus given is not the right treatment for her; it stimulates the heart to more active contractions, but the resistance ahead at the aortic valve is sufficient to make such increased action pernicious; consequently, the cardiac asthma or dyspnea at night was aggravated. She was now given a tablet consisting of 2 minims of the tincture of digitalis, 2 minims of the tincture of strophanthus, ¼ minim of the tincture of belladonna, and 1/200 of a grain of nitroglycerin, to take one tablet three times a day, after meals. She was also given some nitroglycerin in tablets, each 1/200 of a grain, to take when she had one of these night attacks. She was told to let this nitroglycerin tablet dissolve in the mouth and repeat it every fifteen minutes for two, three or four times if the dyspnea continued, or until there was relief. She was also told to drink but little liquid between supper and bedtime so that the blood vessels would not be over-full or the heart subjected to the necessity of circulating an increased amount of fluid. She was told to sleep with the head a little higher than was her custom, as she had been using but one small pillow. This raising of the head and shoulders often prevents attacks of cardiac asthma at night.

October 17.—The patient has had but one attack of cardiac dyspnea at night since last seen, and that was not severe. The pulse tension is better and the heart's action is stronger, and she can walk and go up and down stairs with much less disturbance; in other words, her condition is improved. Again fearing an overdigitalis or strophanthus action on this heart, which is wavering between too strong contractions and a tendency to loss of compensation from weakening of the muscle, the cardiac tonic tablet was reduced in frequency to twice a day, one after breakfast and one after (noon) dinner, for the action of the digitalis and strophanthus during the periods of day when the heart must work the hardest. She was then told to take one of the 1/200 nitroglycerin tablets regularly at bedtime, this not to be dissolved for quick, immediate action, but to be swallowed with a drink of water. The object of this was to lower the general blood pressure at a time when a higher blood pressure or increased activity of the heart was not needed, namely, at night. It should be stated that the diet has been correct from the first, viz.: meat but once a day, and simple, sensible, non-stimulating food and drink.

October 21.—She has had no attack of cardiac dyspnea since she was last seen. She feels stronger, has no cardiac pains, and is sleeping perfectly. The patient was dismissed with instructions to continue the cardiac tonic tablets for another week at the rate of two a day, and then to reduce them to once a day, and that to be taken after breakfast, and after another week to cease taking them altogether. The nitroglycerin tablets were to be continued one at night for two weeks more and then she was to cease taking them regularly, but to keep them on hand for any cardiac emergency, to be taken if there occurred at any time an attack of cardiac dyspnea.

GENERAL REMARKS.

The condition is, of course, incurable. The arteriosclerosis may progress or may remain stationary for some time. She is, of course, in danger of apoplexy. She may develop angina pectoris from sclerosis of the coronary arteries or from sudden disability of the cardiac muscle. If the aortic valve continues to narrow she will have a weakened left ventricle from myocardial degeneration, and perhaps general symptoms of loss of compensation. At present, however, the condition is stationary. It has been learned that nitroglycerin to dilate the blood vessels will relieve her symptoms. At

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the same time small doses of digitalis and strophanthus have improved the action of the heart. Large doses of digitalis would be dangerous as tending to cause cardiac dilatation and even death. She should never hurry or hasten to do anything, she should never drink large quantities of liquid, and she should never allow herself to become constipated. Stimulants, and even much tea and coffee are inadvisable, as is anything that overstimulates the heart or increases the blood tension.

Possibly small doses of potassium or sodium iodid, as 0.10 to 0.20 gram (2 to 3 grains) three times a day, after meals, or a small dose of thyroid, as 0.15 gram (2½ grains) given once a day, may hold the arteriosclerotic process in check. Such treatment is always justifiable and sensible.

FOUL BREATH.

While this is a very frequent, it is also a preventable condition; hence it is rarely excusable for a person having once discovered that the breath is objectionably offensive to others to neglect its prevention. Perhaps the most frequent cause pertains to the teeth. There may be cavities, or there may simply be a lack of cleanliness from an insufficient use of the tooth brush and proper tooth powders, tooth pastes or mouth washes. It is also necessary, when one is alone, to remove with a toothpick particles of food which may have become fixed between closely-set teeth. All cavities should be filled and tartar deposits should be regularly removed, not only because of their likelihood to cause disagreeable odor to the breath, but of the possibility of allowing germs to develop and be swallowed. If the stomach is not in a healthy condition and the gastric juice not normal, such germs may not be killed. The proper tooth powder should be determined by the ease with which the teeth are cleaned, some requiring more friction in the powder, and others requiring more soap. The choice of the powder and the frequency with which the teeth should be brushed is determined by the results. They must be kept clean, and the cleaning must be done at least twice a day, morning and at bedtime.

If there is any tendency to alveolitis, or if purulent alveolitis is present, then antiseptic, followed by alkaline, mouth washes should be frequently used until the condition is cured, but if it tends to recur, then such mouth washes should be used once a day, continuously. For a time weak peroxid of hydrogen solutions are beneficial, especially if the acid, which is formed after its oxidizing action, is quickly washed away with an alkaline solution. If the gums are spongy a 5 per cent. solution of potassium chlorate makes an efficient mouth wash. One of the best local astringents and local antiseptics is a dilute solution (perhaps one part to five) of alcohol in water.

The teeth not being the cause of the odor of the breath, the tonsils should be examined, and not infrequently little calcareous deposits will be found in one or more crypts, or there may be a pocket of caseous deposit back of the tonsil. These should, of course, be removed and the crypts treated with some antiseptic solution and a cleansing antiseptic gargle given.

Another frequent cause of bad breath is postnasal or nasopharyngeal catarrh. If this is a chronic condition the treatment is tedious, and unless the patient thoroughly cooperates, results will be unsatisfactory. The proper treatment of nasal and nasopharyngeal catarrh can only be determined by a study of the individual condition. A warm cleansing solution is, of course, always important and the frequency of its use can only be determined by the rapidity with which the secretion forms deposits.

In atrophic rhinitis the odor is terrible, and, unfortunately, the condition is generally incurable; but there is absolutely no excuse for such a patient polluting the atmosphere of the rooms in which he works or lives. The odor can be prevented by the proper use of mild antiseptic and cleansing solutions.

Wylie, in the *West London Medical Journal*, April, 1908, says that it is useless to expect to clear away fetid accumulations in the nose and nasopharynx with antiseptic solutions, as they do not possess the power of dissolving mucin and albumin, the principal constituents of the crusts. He believes the best solvent is a 1 per cent. solution of sodium sulphate or a 0.5 per cent. solution of sodium borate, in water. He would douche the nose thoroughly with this solution (which must be warmed) until the "crusts and caseous matter" have been removed; then antiseptic solutions may be employed by means of sprays. If the mucous membrane is not degenerated and is still sensitive, he would spray with "liquid paraffin containing menthol, oil of cinnamon, or eucalyptus," but if the fetor is great, and in bad cases of atrophic rhinitis where the mucous membrane is not very sensitive, he would sparingly use Dobell's solution. This solution is as follows:

B.	gm. or c.c.	
Phenolis	1	m. xv
Sodii bicarbonatis	3	
Sodii boratis	3	or āā, gr. xlv
Glycerini	10	fl.3iiss
Aquæ, ad	200	ad, fl.℥vii

M. et Sig.: Use as an antiseptic gargle or as a nasal antiseptic spray.

Wylie attempts to restore healthy secretions by gentle stimulation with a snuff composed of boric acid and attar of roses, but if the disease is atrophic in type and the secretion scanty he uses a very weak formaldehyd solution as a nasal douche. He wisely cautions against carelessness in nasal douching. The very slightest excess of pressure should never be allowed, else the liquid or secretion may be forced into a eustachian canal and middle-ear inflammation follow. He also suggests a nasal douche of "boiled and decanted sea water."

He removes hard crusts painlessly by first subjecting the nasal passages to inhalations of steam, camphor being added to the hot water as a stimulant.

Other causes of disagreeable breath are constipation and dyspepsia. The cause of these conditions should be treated, and as the tongue becomes clean and the pharynx less congested the breath will become better.

Laryngeal and bronchial inflammations and catarrhs, of course, are other causes of bad breath. If the condition is acute or subacute, it can soon be improved by proper treatment. If the condition is a chronic one, mild antiseptic inhalations will largely prevent the fetid condition.

B.	c.c.	
Creasoti	1	m. xviii
Olei pini silvestris	10	or fl. ℥iii
Tincturæ benzoini compositæ, ad	100	ad, fl. ℥iv

M. et Sig.: To inhale a teaspoonful from boiling water one, two, or three times a day.

The bad breath of acutely sick patients, as with typhoid fever, pneumonia, or other serious illness, can be minimized by the proper care of the mouth, tongue and teeth by the nurse. Even the bad breath of patients suffering from incurable disease may be bettered by good advice and simple local care.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, DECEMBER 5, 1908.

EXPERIMENTAL CHEMOTHERAPY.

The recent address by Professor Ehrlich before the German Dermatological Association contains so much that is novel and suggestive that a statement of the chief points can not but awaken interest. While the specific curative action of mercury and iodid of potassium in syphilis is unquestioned, yet it is entirely unknown in what way they act. In order to throw more light on this phase of therapeutic action it is necessary to break away from the beaten paths of investigation and to start out on new lines. As long as twenty-five years ago Ehrlich showed that when a certain coloring matter is injected into a living animal it may stain only certain tissues, e. g., those of the nervous system, indicating that there is a peculiar avidity on the part of this particular tissue for the stain. Hence grew the side-chain theory which has proved to be of such tremendous importance in immunologic investigation, and the essential point in this theory is that certain substances may act on a tissue, or cell, or parasite, only when it is taken up by the body acted on. Ehrlich states that to understand the relation between the chemical composition of a remedial agent and its action it is necessary to determine how the substance is distributed throughout the body and where it is anchored and causes its special effects. We see that Ehrlich here is building still further on his lateral chain hypothesis, and we now turn to this recent work with trypanosomes.

When it became clear that sleeping sickness and other forms of trypanosomiasis were not curable by serum therapy, search was started for chemical substances to destroy the parasite in the body. The difficulty is to find chemical substances that will destroy the parasite and at the same time cause no injury to the host. Under the name atoxyl (sodium aminophenyl arsenate) a form of arsenic was introduced hopefully a few years ago, but it did not give satisfactory results in trypanosomiasis because the trypanosomes, especially in animals, soon become immune to its action. In other words, as Ehrlich would say, the microbes lost certain of their chemoreceptors so that the atoxyl no longer was bound. Recently Ehrlich and his coworkers have succeeded in producing an enormous number of new combinations and variations of this substance, and these they have tested biologically on a large scale. Toxic as well as non-toxic derivatives have been obtained, some being, for instance, 1,500 times as poisonous as others. Thus there is one substance that causes such changes in the brain or ear of mice as to turn them into the so-called dancing mice; others cause icterus or diarrhea; others renal lesions—different combinations producing different lesions. On testing the substances on animals with trypanosomiasis it was found that one (acetylarsanil acid) would cure mice even if given only a few hours before death occurred in the controls. But this substance did not seem to act directly on the parasite, but either by being changed itself within the body or because it causes trypanosomicidal substances to form in the body. Ehrlich reasoned that the effect might be owing to reduction products as a result of the reducing power of the animal tissues, and by reduction experiments outside the body, substances of extraordinary action have been obtained. Whereas a 5 per cent. solution of the original acid did not have any influence on trypanosomes in the test-tube, new substances have been obtained solutions of which in concentration of 1 to 100,000 kill the parasites at once and in thirty minutes when diluted 1 to 1,000,000. Hence arsanil acid probably does not act as such in the body but by virtue of its reduction products.

As stated in the foregoing, Ehrlich postulates that the protoplasm of cells contains certain chemical groups which anchor chemicals in the same way as bacterial poisons are assumed to be fixed to the cell, and he now believes that he has found a substance which has an intense avidity for trypanosomes and which is not very toxic. Indeed, it cures advanced trypanosome infections in mice and rabbits even after a single injection, thus reaching the same ideal of direct therapeutic effect that so far has been achieved only by certain antitoxic sera. While these results do not apply directly to human beings they certainly are full of promise, and no one can say that some day great enrichment of therapeutic resources may not come from this splendid work.

HONEST AND DISHONEST BIBLIOGRAPHIC WORK.

Not long before his death Virchow wrote a scathing criticism of some features of current German medical literature. He especially criticized the pretense to erudition shown in the reproduction of quotations and bibliographies, and his counsel to his compatriots to "verify your references" came as a sort of shock to those of us who had been prepared to accept everything with the "made in Germany" label as authentic and authoritative. Some of us, of course, were well aware of the facts; we have seen misprints carried from one bibliography to another, cases duplicated and other errors vitiating a considerable portion of the literature of a disorder or an operation in certain instances. Of course, the Germans were not the only sinners, but their traditional thoroughness was sometimes only a fiction—a sciolistic pretense

Bibliographic references, to be useful, should include only such as have a direct reference to the subject in hand, and which bring out or elucidate some point of interest. It is only in the case of little known or new disorders or operations that anything like an exhaustive bibliography should be attempted. In that case a conscientious student of the subject does not feel particularly thankful to find a bibliography including matter that has only a distant relation to the subject which he is investigating. Many authors, in their desire to be comprehensive, have been guilty of this error. With subjects having an extensive literature an ill-selected, possibly inaccurate, list of references to a small number of papers, such as we sometimes see, even in textbooks, is not only useless, but a nuisance. The only use for a bibliography of any subject is to give the reader a fair general, if not an actually exhaustive, view of the really important literature. Each reference should be to some real contribution to our knowledge, not to an uncritical rehash of facts already known. If abstracts are quoted, they should be quoted as such and not as original references. It would be better also if the full title of each article referred to were given, as well as the name of the author and the periodical, date of issue, year, volume and page. In that case the reader would have a better chance to know whether or not the reference was one that would be of interest to him. This would, of course, require a little more industry on the part of the compiler.

The *Index Medicus* and the Index-Catalogue of the Surgeon-General's Library have been a great boon to the medical profession, but, like other good things, they are capable of misuse. While the worst offenders in this matter of fake or semi-fake bibliography are those who copy without scruple from others, who may themselves be only second-hand copyists of still others, there is a probably much larger class of men who do not hesitate to do much of their reference work directly from the two above publications. This is neither entirely honest nor altogether safe. Even the full references given can not always convey a correct idea of the value of the articles listed, and no attempt to do so is made by the compilers. No reader cares much for a bibliography which, without pretending to be exhaustive, indiscriminately includes the worthless and the good, together with the duplicated publication of articles with which some writers cumber the record, practically recommending all alike as worthy of study. It is an imposition on the honest student to offer such a list of references.

It is not intended in these remarks to imply that the great mass of the bibliographic work in American medical literature is not honestly and judiciously done. The evidence, we believe, is decidedly to the contrary. Nor would we have it inferred that some of the faults we have here noticed are due to intentional dishonesty. There is a sort of carelessness sometimes in such work that can hardly be called by so harsh a name; nevertheless it is not commendable, and so far as the tendency exists it calls for condemnation. There is a temptation to sciolism among a certain class of workers in every department of human knowledge, and some medical writers capable of doing better work are guilty of it through indolence and thoughtlessness if nothing worse. As some one has said, in medical writings, above all others, absolute sincerity is the one indispensable virtue. Until that virtue has been attained there will be room for amendment.

THE ADVANCE AND RETREAT OF MEDICAL STANDARDS.

It is often assumed that practical advances, once secured, will be easily maintained, and, indeed, that the law of progress is practically automatic and irreversible in its workings. That this is not true may be readily appreciated from two half-forgotten chapters in medical history recently recalled to the mind of the medical profession of to-day.

The law of Frederick II of Germany, for the regulation of the practice of medicine[1]—which is, so far as known, the earliest modern law on that subject—proves that before the middle of the thirteenth century many recently secured or perhaps still unattained improvements in the regulation of medical practice had been anticipated on the statute-books of the Two Sicilies. Four years of medical study, three years of preliminary education, a year with a physician before regular practice might begin—all this was required for the honor and dignity of the medical profession nearly seven centuries ago. At the same time many abuses in the relations of physicians and druggists were regulated, and the purity of drugs was secured by enactment.

An article on the first American medical school by Dr. James J. Walsh[2] shows that, though we have been usually accustomed to say that the first lectures in medicine in America were given at the University of Pennsylvania in 1765, this event was anticipated by almost two centuries at the University of Mexico, where the first lectures in medicine were delivered about 1580. A complete medical school was established in connection with this university in the early part of the seventeenth century. At this medical school four years of attendance at lectures were required for graduation and three years of preliminary study before the student was allowed to enter the practice of medicine. The medical course of the Mexican medical school was founded mainly on Hippocrates, though Galen and Rhazes were also faithfully studied. The diploma of graduation from this medical school was required for practice in the important towns of Mexico. There are a number of interesting remains of this work. The first medical book ever written in America, entitled "Secretos de chirur-

1. THE JOURNAL, Feb. 1, 1908, p. 388.
2. New York Med. Jour., Oct. 10, 1908

gia," was by Dr. Pedrarias de Benavides and was published at Valladolid, Spain, in 1567. The first medical book ever published in this country was "Opera Medicinalia" by Francisco Bravo, copies of which are probably to be found in old Mexican book stores and perhaps also in Spanish collections. This would be a rare medical bibliographic treasure for American medical libraries.

These two epoch-marking medical achievements have been all but forgotten; the dreary decadence that followed each is only too familiar to the student of medical history. A strange and melancholy phenomenon it seems that the advances in social and professional conditions attained by the prolonged and serious efforts of former generations should have been allowed to slip from the nerveless grasp of those succeeding. Therefore, these records of the past are all the more interesting because they emphasize the necessity for continued effort to advance if we would even maintain the standards set by our predecessors. The characters deciphered from these fading palimpsests of history spell both a warning and a stern, peremptory challenge to be up and doing.

Medical men are sometimes inclined to think that this generation has accomplished enough, and that too much attention is being devoted to the uplift of the profession. Yet they, better than any others, should know that incessant effort is the price, not only of progress, but of existence itself.

CHOLERA IN RUSSIA.

Cholera in Russia, which has recently caused well-founded alarm in all countries having commercial intercourse with the infected region, is reported in the Public Health Reports to be on the decrease. The present outbreak began in July and August principally in Astrakhan and Saratov, the disease having been previously absent from Russia since last January. Its appearance in the remote southeastern provinces of Russia in July did not attract much sanitary attention. In September, however, when cases began to appear in the neighborhood of St. Petersburg, the situation was justly regarded as grave.

The cases have since increased alarmingly, not only in the Russian capital but in many other parts of the country; at St. Petersburg between 6,000 and 7,000 have been recorded, with a mortality of about one in three. On the appearance of cholera at St. Petersburg the Public Health and Marine-Hospital Service sent a medical officer to Russia with orders to report on the situation. An inspection service in the interest of the United States has since been established at Libau, on the Baltic, the only Russian port from which emigration takes place to the United States. At Libau, which is connected with St. Petersburg and other infected districts by railroad, intending emigrants are detained in close quarantine for five days. If, after this period of detention, conditions are satisfactory they are allowed to go into the city and are lodged in various places under observation until their departure. Before embarking emigrants undergo final examination and all baggage is disinfected prior to being taken on board. The voyage from Libau to New York lasts from seventeen to eighteen days. Libau has a water supply from artesian wells over 200 feet deep. The last occurrence of cholera at that place was in 1892, when all the members of one family were attacked, but the disease did not spread.

The great mass of Russian emigration is via ports of other European countries whose own interests make them exercise a vigilant surveillance of suspected travelers passing through their gates. Germany's calamitous cholera experience, beginning in 1892 with the sudden appearance of the disease in Hamburg—an important port of departure for Russian emigrants—taught a convincing lesson in regard to the relation of the water supply to cholera. An epidemic causing within ten days of its outbreak 1,000 cases a day is not soon forgotten. This outbreak lasted three years, visiting hundreds of places in that country and threatening the entire world.

At St. Petersburg many conditions exist which favor the spread of cholera when once introduced. The city, built on made ground, is surrounded by a network of stagnant canals, whose water is frequently drunk by the poorer classes. Hamburg's lesson of defiled water supply should be put to practical application at St. Petersburg.

THE RELATION OF PHYSIOLOGY TO PHYSICS AND CHEMISTRY.

Compared with the utterances of one of his predecessors, it is noteworthy that Dr. J. S. Haldane,[1] in his opening address as president of the physiologic section of the British Association for the Advancement of Science, places himself without reserve among the, as he believes, increasing number of physiologists who are not satisfied with physico-chemical explanations of all physiologic facts. It seems to him, he says, that while the advance in physiology appears to have brought us in some ways nearer to a physico-chemical explanation of life, it has in other ways put us further off. On the one hand we are accumulating facts as to the physical and chemical source and ultimate destiny of the matter and energy passing through the animal body; on the other hand there is an equally rapidly accumulating knowledge of an apparent teleologic ordering of this material and energy which is beyond our present ability to account for by chemical and physical laws. The time is past, he says, when we can shut our eyes to this knowledge, and we must face again the old problem of life. In physiology, and in biology generally, he holds that we are dealing with facts which, so far as our

1. Nature, October 1.

present knowledge goes, differ not only in complexity but also in kind from physical and chemical phenomena. In particular he points out how impossible it is to account for all the facts of reproduction and heredity from a purely mechanistic standpoint. The difficulty does not exist if we use the conception of a living organism with its specific activities and bearing the same relation to biology as matter and energy do to physics or the atom or ion to chemistry. Berkeley, Hume and others have shown that the fundamental hypotheses of physical science are only of value so far as they successfully fulfill their purposes. We are justified, therefore, in seeking for a conception of life that will serve better as a working hypothesis than the physico-chemical one. As regards the charge that will be made "that the change of front" here urged "involves the giving up of all real attempt at scientific explanation in biology," he says that, leaving aside the philosophical question involved, the first requisite of a working hypothesis is that it should work, and he has tried to point out that the physico-chemical theory of life has not worked in the past, and it is his belief that it never can work. "As soon as we pass beyond the most superficial details of physiological activity it becomes unsatisfactory, and it breaks down completely when applied to fundamental physiologic problems such as that of reproduction." It is perhaps significant in this connection that the opening address before the botanical section by its president, F. F. Blackman,[1] while devoted to the manifestations of the principles of chemical mechanics in plants, almost starts out with the statement that the question "whether there is not here some discontinuity in Nature; whether the play of molecular and atomic forces occurring outside the living organism can ever account for the whole of the complexity and correlation of chemical and physical interactions demonstrable within the living structure," is very far from being answered, and that in a scientific assembly no one will call for prophecies. This is very different from and, it appears to us, more scientific than the dogmatic assumptions of the identity of vital and physico-chemical processes or the condemnation of any contrary views as detrimental to scientific progress. The "specter" of vitalism, as Dubois-Reymond called it, is still before us and it seems at times a pretty healthy ghost.

HOPEFUL PROGNOSIS.

"To those who see much of this (locomotor ataxia) and like diseases it is a patent fact that there is always a liability to suggestion which seems almost characteristic and inseparable from the condition of invalidism." This is one of the opening sentences in Dr. Hamilton's paper printed in this issue.[1] The powerful influence exerted by the mental state over the ordinary physiologic processes of the body is well known. Fear may dry up the saliva, check the flow of the digestive juices, paralyze the sphincters and cause failure of the heart's action. Worry retards or perverts the processes of digestion and assimilation, inhibiting digestive secretions and even reversing peristaltic action. On the other hand, appetizing sights and odors induce a mental state that stimulates the digestive juices. Digestion is promoted by cheerfulness and placidity. It is alleged that death has occurred from a determination to die and from a (unfounded) belief that it was inevitable, in conditions in which no adequate cause of death was discoverable, either clinically or at postmortem examination. It is well known that in a certain percentage of cases spontaneous recovery, or at least recession, occurs, not only in locomotor ataxia but in tuberculosis, asthma and other diseases ordinarily regarded as incurable. Fear undoubtedly exercises a depressing influence, and, *per contra*, hope and encouragement stimulate and refresh. There is more than imagination in the often heard remark, "It does me good even to see the doctor; his presence brings confidence and hope." Contrariwise, the depressing effect of an over grave demeanor, and especially of a grave prognosis uttered in a patient's hearing, or even in his sight, can hardly be overestimated in its effect on his natural defensive forces, which ought to be keyed by the physician up to concert pitch. The moral is that an unfavorable prognosis should be given only with extreme caution, and then seldom absolutely, but accompanied with the encouragement that even the most forlorn hopes have at times succeeded. The patient should always be given the benefit of all hope and encouragement that is possible. If a hopeless prognosis is felt to be inevitable it should be given usually to the friends rather than to the patient. The failure to observe this admirable caution leads to two serious evils. First, it undoubtedly, in many cases, proves the final straw that breaks down the struggle for recovery. Second, the prognosis sometimes misses after all; and then if the patient falls into the hands of some irregular practitioner, faith healer or whatnot—who, whatever else he does, is sure to make the most of this element in treatment — the result may be another vaunted case of "recovery from a fatal disease after all the doctors have given him up."

1. Page 1915.

Medical News

CALIFORNIA.

County Society Investigates Use of Proprietaries.—The San Joaquin County Medical Society has sent a circular letter to its members announcing the appointment of a special committee to look into the abuses arising from the use of proprietary medicines. The results on the physicians prescribing such preparations are summarized as follows:

1. The physician becomes lazy as far as prescribing National Formulary preparations is concerned.
2. He compels the druggist to load his shelves with a lot of medicines easily compounded by any intelligent pharmacist.
3. The druggist, having these preparations on his shelves, is tempted to prescribe for many people who would otherwise consult a physician.
4. Any intelligent person, reading the prescription which the doctor writes before presenting it to the druggist, becomes familiar with the name of the preparation and thereafter buys it in the original package.
5. The doctor, in his efforts to dispose of these preparations, becomes an agent for proprietary medicine concerns.

This subject was taken up with a number of pharmacists in San Joaquin County, who stated that they were anxious to assist the physicians in this movement so as to eliminate a large number of proprietary preparations which they were compelled to carry. A sheet containing twenty questions was sent to each member of the society. Some of these questions are:

Can you with your present knowledge of pharmacy write a prescription containing anything you desire? If so, why don't you?
When you prescribe proprietary preparations, do you remember all the ingredients they contain?
Is it not the physician's fault that proprietary remedies are kept in stock in all drug stores?
Does not a physician's knowledge of therapeutics become less after using proprietary medicines for ten or twenty years?
Do you honestly believe that you cure more patients by using proprietary medicines than by using separate drugs? Why do you use them?

A summary of the answers received in reply to these questions would certainly be interesting.

ILLINOIS.

Medicine Man Fined.—H. Darwin McIlrath, president of a medicine company in Chicago, charged with practicing medicine without a license and prosecuted by the state board of health, is said to have been found guilty November 16 and fined $100.

Subnormal Children to Be Segregated.—Plans announced by the president of the Board of Education of Chicago are to the effect that tubercular and subnormal children in the public schools of Chicago are to be segregated and provided with a special mental and physical training institute to be founded on a 240-acre tract of land in Riverside. Arrangements are also being made to provide a substitute for the present John Worthy School for delinquent children on the same tract of land.

Chicago.

Deaths of the Week.—For the week ended November 28, 520 deaths were reported to the Department of Health, 76 fewer than for the preceding week and 18 in excess of the corresponding week of last year. Consumption caused 63 deaths; pneumonia, 61; heart diseases, 49; acute intestinal diseases, 42; violence (including suicide), 34; scarlet fever, 13; diphtheria, 9; typhoid fever, 8; measles, 4, and whooping cough, one death.

Contagious Diseases.—There were 968 cases of contagious diseases reported to the department during the week ended November 28, distributed as follows: Scarlet fever, 255; diphtheria, 222; tuberculosis, 189; chickenpox, 90; typhoid fever, 44; pneumonia, 31; whooping cough, 18, and minor contagious diseases, 25. Compared with the preceding week, the cases of diphtheria increased 7, but the deaths from this cause decreased 14. There were 43 more cases of scarlet fever, but the number of deaths remained the same.

MAINE.

Medical School Opens.—The Medical School of Maine, Brunswick, reopened after its summer vacation, October 23.

Personal.—Dr. Charles E. Williams, Auburn, was seriously injured by the overturning of his automobile in Leeds, October 9, while on his way to his summer camp on Androscoggin Lake. Mrs. Williams died from the injuries received.——Dr. William P. Hutchins, Rumford, was held up and robbed of $250 recently.——Dr. Eben J. Marston, Bath, while making a professional call, was attacked and bitten in the face by a collie dog. The wounds were cauterized at once and no ill effects are anticipated.

Embargo on New Brunswick Immigration.—The secretary of the State Board of Health has received information from the inspector of the board near Madawaska that there are 125 cases of smallpox in the town of Edmonston, N. B. Letters of warning have been sent to local boards of health in the western part of the state, ordering that until further notice no person shall go from the province of New Brunswick into Maine, unless he can prove to the satisfaction of the local board of health that he has been vaccinated and that he has not been exposed to smallpox.

Society Meetings.—The fifty-fifth annual meeting of Penobscot County Medical Society was held November 17, in Bangor. The following officers were elected: President, Dr. Harry Butler; vice-presidents, Drs. J. Albert Lethiecq, Brewer, and Herbert T. Clough, Bangor; secretary, Dr. John B. Thompson, Bangor, and treasurer, Dr. Harold H. Crane, Bangor.——At the annual meeting of Androscoggin County Medical Association, resolutions were adopted urging the establishment by the government of a national department of public health.——At the annual meeting of the Westbrook Medical Club, the following officers were elected: President, Dr. Alphonso N. Witham; vice-president, Dr. Adjutor Coutourier; and secretary-treasurer, Dr. Louis k. Hills.——At the annual meeting of the Cumberland County Medical Society, held in Portland, the following officers were elected: President, Dr. Owen P. Smith; vice-president, Dr. Herbert F. Twitchell; secretary, Dr. Harold A. Pingree; treasurer, Dr. Edwin W. Gehring; and censors, Drs. Stanley P. Warren, Charles W. Foster and Frank H. Jordan, all of Portland.

MARYLAND.

Medical Club Organized.—An association of physicians of Washington County, known as the Medical Club, was organized at Hagerstown, November 25, the object being the promotion of scientific progress and good fellowship.

Personal.—Dr. W. Frank Hines, superintendent of state immigration, has moved from Chestertown to Baltimore.——Dr. R. Owens, mayor of Hyattsville, and treasurer of the Maryland Agricultural College, is under treatment at Johns Hopkins Hospital.

State Under Quarantine.—The State of Maryland has been placed under quarantine by the Secretary of Agriculture on account of an epidemic of foot-and-mouth disease among cattle at Lineboro. The infection is said to have been introduced by cattle sent from Buffalo.

Baltimore.

Gift to Dispensary.—An anonymous benefactor has given $15,000 to build an addition to the Phipps Dispensary of Johns Hopkins Hospital. This will practically double the capacity of the institution.

Isolation Hospital Nearing Completion.—Sydenham Hospital for Infectious Diseases is almost completed and will be opened January 1. Dr. W. B. Morrill of the Children's Hospital, Detroit, has been appointed physician in charge, and began his duties December 1.

Eminent Scientist Dies.—Prof. William Keith Brooks, a member of the faculty of Johns Hopkins University since its foundation, died in Baltimore, November 12, aged 60. He was distinguished as a biologist and was known as the "Father of the Oyster Culture."

Portrait Presented.—At the meeting of Baltimore Medical Society, December 1, the subject of "Proprietary Medicines" was discussed, and a portrait of the late Dr. George J. Preston was presented to the Medical and Chirurgical Faculty of Maryland by his friend, Dr. Harry Friedenwald.

City Alms House Condemned.—The grand jury, in its report, characterizes the condition of Bayview Asylum, the city alms house, as "frightful," recommends an appropriation for the erection of a building for hospital purposes only, and that arrangements be made with the state whereby the hopelessly insane may be cared for in the state institutions.

Personal.—Dr. Albert H. Carroll has returned from Brazil.——Dr. Thomas McC. Anderson sailed for Bremen, November 11.——Dr. Charles G. Hill has been elected president of the North Carolina Society of Maryland.——Dr. Roland B. Whitridge has returned from Europe.——Dr. Gladys R. Henry, the only woman resident physician at Johns Hopkins Hospital, was operated on for appendicitis, November 17.——Dr. Theodore Cooke, Jr., was elected president of the Association of Prison Physicians and Surgeons at Richmond, November 18.——Dr. Hugh H. Young, Johns Hopkins Hospital, while returning from a hunting expedition, fell and fractured his left arm.——Dr. Owen C. Smith, professor of pharmacy in Baltimore Medical College, had his left eye enucleated November 23, as the result of an injury received while hunting six days before.

MICHIGAN.

Society Meetings.—At the annual meeting of Eaton County Medical Society, held in Charlotte, October 29, Dr. Arthur R. Stealy, Charlotte, was elected president; Dr. Wallace Newark, Charlotte, vice-president; Dr. Arthur H. Burleson, Olivet, secretary-treasurer; Dr. Philip H. Quick, Olivet, delegate to the state society; and Dr. Charles A. Stinson, Eaton Rapids, alternate. At the annual meeting of Ingham County Medical Society, held in Lansing November 12, Dr. Oscar H. Bruegel, Agricultural College, was elected president, and Dr. Charles H. Brucker, Lansing, vice-president, and Dr. Samuel Osborn, Lansing, was re-elected secretary-treasurer.——The Detroit Society of Neurology and Psychiatry was organized at the Detroit Club, November 19, with thirty charter members. The society is to meet four times a year and devote its energies to the study of neurologic and psychiatric problems. The following officers were elected: President, Dr. Colonel R. Burr, Flint; vice-president, Dr. David Inglis, Detroit, and secretary-treasurer, Dr. Charles W. Hitchcock, Detroit, and these officers, with Drs. Albert M. Barrett, Ann Arbor, and Edmund A. Christian, Pontiac, form the council.

MISSOURI.

Ask a Quarter Million.—The Hospital and Health Board, Kansas City, at a meeting November 18, adopted a recommendation to the council to submit a proposition to vote bonds to the amount of $250,000 for an incineration plant and $20,000 for a municipal tuberculosis sanatorium at Leeds.

Convicted and Fined.—H. M. Blumenthal, a traveling eye specialist, who has been fitting glasses, treating eyes, etc., is said to have been fined $100 at Nevada, Mo., for violating the statutes governing the practice of medicine without a license. Other cases against this individual are likely to be pushed as the medical profession of Nevada is determined to break up the illegal practice of medicine in that place.

County Medical Society Elects.—Ray County Medical Association held its annual meeting in Richmond, October 31, and elected the following officers: Dr. Elmer T. McGaugh, Richmond, president; Dr. Robert Sevier, Richmond, vice-president; Dr. Herman S. Majors, Hardin, secretary; Dr. Edward F. Higdon, Richmond, treasurer; Drs. Emmet W. Rentfro, Rayville; George W. Joiner, Knoxville, and James E. Ball, Millville, censors; Dr. Herman S. Majors, delegate to the state medical society, and Dr. James W. Smith, Richmond, alternate.

St. Louis.

Add to Consulting Staff.—At the last meeting of the consulting staff of St. Louis Maternity Hospital, the following additions were made: Dr. William W. Graves, neurologist; and Dr. Abram C. Leggatt, surgeon.

Medical Aid in Schools.—Emergency cabinets are being placed in the public schools in St. Louis under the auspices of Dr. James Stuart, supervisor of schools, to enable the superintendents to render first aid in emergencies.

Meningitis Serum.—A supply of Flexner serum has been placed in the hands of Dr. Harris, city bacteriologist, and Dr. McConnell, pathologist of the Skin and Cancer Hospital, who will distribute it to physicians requiring it for use in cases of meningitis.

Object to Cancer Hospital.—Residents of the neighborhood of Forest Park Boulevard object to the new Barnard Free Skin and Cancer Hospital on that thoroughfare, and threaten to resort to law. The land for the building and $100,000 for the endowment of the institution were donated by Mr. George T. Barnard.

Free Beds in Hospital.—The board of directors of the St. Louis Protestant Hospital has recently determined to open the entire institution wards and rooms to patients who require special treatment but who are unable to pay both hospital and physicians' fees. Such patients will be admitted only on written recommendation of a physician, and will receive medical and surgical treatment in the institution free of charge.

NEW HAMPSHIRE.

Anniversary Reception.—The Nashua Medical Association, on October 16, gave a reception to Dr. and Mrs. Charles B. Hammond, in honor of the twenty-fifth anniversary of their marriage. Dr. Ella B. Atherton, in behalf of the association, presented Dr. and Mrs. Hammond with a silver candelabrum.

Society Meetings.—At the annual meeting of the Rockingham County Medical Association, held in Portsmouth November 12, the following officers were elected: President, Dr. Abram W. Mitchell, Epping; vice-president, Dr. William O. Junkins, Portsmouth; secretary, Dr. Walter Tuttle, Exeter; treasurer, Dr. Alice M. Chesley, Exeter; delegates to the state society, Drs. John W. Parsons, Portsmouth, and George H. Guptill, Raymond; and censors, Drs. William H. Nute, Exeter, and Fred S. Towle, Portsmouth.——At the centennial meeting of Stratford County Medical Society, held in Dover October 29, Dr. Lewis W. Flanders, Dover, was elected president; Dr. Thomas J. Dougherty, Somersworth, vice-president; Dr. Harry O. Chesley, Dover, secretary; Dr. A. Noel Smith, Dover, treasurer; Dr. Micah B. Sullivan, Dover, auditor; Dr. George P. Morgan, Dover, censor; and Dr. Charles C. Rogers, Farmington, delegate to the state society.

NEW JERSEY.

Prevention of River Pollution.—The municipalities of Camden and Riverton have received notice from the State Board of Health that they must stop the practice of discharging crude sewage into the Delaware River, and that before Sept. 1, 1913, they must install sewage disposal plants and have them in full operation.

October Vital Statistics.—During the month ended October 15, 2,004 deaths were reported to the Bureau of Vital Statistics. Of these, 786 were of infants under 1 year, 261 were of children from 1 to 5 years, and 782 of individuals 60 years old and over. Among the principal death causes were: Infantile diarrhea, 367; diseases of the nervous system, 351; diseases of the circulatory system, 307; tuberculosis, 298; nephritis, 194; cancer, 144; pneumonia, 125; diphtheria and typhoid fever, each 34; cerebrospinal meningitis, 24; whooping cough, 21; scarlet fever, 18; and measles, 1.

Personal.—Dr. Paul N. Litchfield, Camden, has been elected coroner of Camden County, vice Dr. Joel W. Fithian.——By the will of Mr. Walter Ammon, who was shot and killed in Jersey City recently, one-third of his interest in the Ammon Butter and Egg Company were devised to Dr. John J. Baumann, Mr. Ammon's physician and most intimate friend.——Dr. J. Watson Martindale, Camden, was thrown from his carriage, November 20, and sustained a fracture of the scapula.——Dr. William K. Newton has been elected president, Dr. George E. Tuers, vice-president; Dr. Joseph A. Maclay, secretary, and Dr. Archibald F. Anderson, treasurer of the medical board of Paterson General Hospital.——Dr. P. DuBois, Bunting, was elected president; Dr. Frederick H. Pierson, vice-president; Dr. Russel A. Shirrefs, secretary, and Dr. John H. P. Conover, treasurer, of the Medical Society of the Elizabeth General Hospital and Dispensary, at the fifteenth annual election.

NEW YORK.

Mortality Among Bottle-Fed Babies.—The current bulletin of the State Health Department shows that during 1907 there were 37,370 deaths of infants under 2 years of age in the state. Investigators place the proportion of deaths between bottle-fed and breast-fed babies as 25 to 1, and this would give 8,844 deaths from this cause among bottle-fed babies last year, a greater number than was claimed by all other infectious and contagious diseases, excepting tuberculosis, combined.

Election.—At the one hundred and third annual meeting of the Medical Society of the County of New York, held November 23, the following officers were elected: President, Dr. H. Seymour Houghton; vice-presidents, Drs. John E. Weeks and Joseph Brettauer; secretary, Dr. John Van Doren Young; assistant secretary, Dr. J. Milton Mabbott; treasurer, Dr. Charles H. Richardson; censors, Drs. J. Riddle Goffe, Henry M. Painter, Charles G. Kerley and Albert W. Ferris; delegates to the Medical Society of the State of New York, Drs. H. Seymour Houghton, Floyd M. Crandall, W. Bryant Hoag, E. Eliot Harris, Henry M. Silver, J. Milton Mabbott, Abraham Jacobi, Michael C. O'Brien, Egbert Le Fevre, Frederic R. Sturgis, Arnold Knapp, Frank S. Fielder, Walter L. Carr, Charles H. Richardson, John A. Bodine, Edward M. Foote 2nd Edmund P. Fowler.

Meeting of Medical Examiners.—The State Board of Medical Examiners, at its meeting November 15, elected Dr. William Warren Potter, Buffalo, president, and Dr. William S. Searle, Brooklyn, vice-president. It placed itself on record as being in favor of the six-year combined baccalaureate and medical course. Arrangements were made for the preparation of a medical syllabus in keeping with the suggestion of prominent medical educators, and a committee, of which Dr. Lee H. Smith, Buffalo, is chairman, was continued. The assignments to the various subheads of medicine were voted as follows: Physiology, Dr. R. H. Williams, Rochester; anatomy, Dr. William S. Ely, Rochester; hygiene and sanitation, Dr. Eugene Beach, Gloversville; chemistry, Dr. Floyd S. Farnsworth, Plattsburg; surgery, Dr. Floyd M. Crandall, New York; obstetrics and gynecology, Dr. William W. Potter, Buffalo; bacteriology, Dr. Frank W. Adriance, Elmira; pathology, Dr. Lee H. Smith, Buffalo; and diagnosis, Dr. William S. Searle, Brooklyn. The following were elected members of the question committee: Drs. Smith, Potter, Adriance and Williams.

New York City.

Death of Dr. McCosh.—Dr. Andrew J. McCosh, who was injured November 28, in a runaway accident, suffering a fracture of the base of the skull and other injuries, died in the Presbyterian Hospital, December 2.

Tuberculosis Exhibit.—The international tuberculosis exhibit will be open free to the public for six weeks at the American Museum of Natural History, Seventy-ninth Street and Columbus Avenue, beginning November 30.

Harvey Society Lecture.—The fifth lecture of the Harvey Society by Drs. M. J. Rosenau and John F. Anderson, P. H. and M.-H. Service, on December 5, at the New York Academy of Medicine, is on the subject of "Anaphylaxis."

Campaign Against Tuberculosis.—Under the auspices of the section of public health of the New York Academy of Med-

icine, a special meeting will be held December 11, at which Prof. Walter F. Wilcox of Cornell University will deliver an address on "The Need of New York State for Better Vital Statistics in Its Campaign Against Tuberculosis."

Joint Meeting.—On December 9, joint meeting of the New York Pathological Society and the New York Surgical Society will be held, at which a paper by Drs. John Howland and A. N. Richards will be presented on "Experimental Study of Pathology and Metabolism in Delayed Chloroform Poisoning." The subject will also be discussed from the clinical standpoint.

Shall Presbyterian Hospital Move?—The Presbyterian Hospital is fast outgrowing its present accommodations at Seventy-first Street and Park Avenue, and, as more hospital facilities are needed in the tenement district to the east, real estate experts are urging the trustees to sell their present property and to buy a new site in the forenamed district while real estate is still comparatively cheap.

New Hospital Opened.—The Mount Moriah Hospital, a nonsectarian institution on the East Side, has just been opened. Edward Lauterbach, who made the opening address, deplored the fact that the hospital charter had not been granted by the State Board of Charities, and has pledged himself to endeavor to obtain a charter from this organization. The money for this hospital was raised by private subscription, the largest contribution being limited to $250. There is a guarantee fund to meet all expenses for five years. There is an equipment of 80 beds, an operating room, and a children's ward.

NORTH CAROLINA.

Pasteur Institute Report.—On July 1, the State Board of Health established a Pasteur institute in Raleigh. During the first four months of its existence 34 patients were treated, all but eight of whom were free patients.

Hospital Notes.—The Gaston County Hospital, Gastonia, was formally opened November 12.——On October 30 and 31, tag days were held in High Point for the benefit of the Junior Order Hospital of that city.——The floral bazar held by the ladies of Charlotte the first week in November netted a little over $500 to St. Peter's Hospital in that city.

OHIO.

Hospital Notes.—St. Clair Hospital, Cleveland, has purchased 90 feet of land adjoining its present location for $8,000 and proposes to erect a new building on this site.——The new Jefferson Hospital, Toledo, was formally opened, November 11, with a free clinic and a banquet to the staff.

District Society Meetings.—The fifth annual meeting of the First District Medical Society was held in Cincinnati November 16. Dr. Hugh J. Death, Franklin, was elected president; Dr. John C. Larkin, Hillsboro, vice-president, and Dr. John P. Miller, Cincinnati, secretary.——At the annual meeting of the Second District Medical Society, held in Troy November 12, Dr. J. Emerson Monger, Gettysburg, was elected president; Dr. Ralph A. Bunn, Dayton, vice-president, and Dr. Asa C. Messenger, Xenia, secretary (re-elected).——The Ninth District Medical Society held its sixth annual meeting in Toledo November 10 and elected Dr. Peter J. Kline, Portsmouth, president; Dr. John Eakins, Gallipolis, censor; Dr. Joseph S. Rardin, Portsmouth, secretary, and Dr. John E. Sylvester, Wellston, councillor, the two latter being re-elected.

PENNSYLVANIA.

Loss by Fire.—The two-story annex of the Idlewood Sanatorium in Greentree Borough was destroyed by fire November 9. The loss is estimated at $10,000.——The new Tuberculosis Camp for Women at Marshalsea was burned to the ground November 5, involving a loss of about $6,000, partially covered by insurance.

New State Institution.—The Eastern Pennsylvania State Institution for the Feeble-Minded and Epileptics, Spring City, was formally opened November 16. Six buildings are already completed at a cost of $350,000. For the time being the institution will admit only men, but when entirely completed, 23 buildings will be erected at a total contemplated cost of more than $1,000,000, making this one of the best equipped institutions of its kind in the world.

Officers Elected.—At the annual meeting of the Somerset County Medical Society held at the Markleton Sanatorium, the following officers were elected for the coming year: President, Dr. Charles P. Large, Meyersdale; vice-president, Dr. Richard T. Pollard, Garrett; secretary, Dr. Bruce Lichty, Meyersdale; treasurer, Dr. Walter S. Mountain, Confluence; reporter, Dr. Henry C. McKinley, Meyersdale; county censors, Drs. Henry Wilson, Somerset, Albert M. Lichty, Elk Lick, and Ross J. Hemminger, Meyersdale; and district censor, Dr. Henry L. Marsden, Somerset.

The Cattle Plague.—The epidemic of foot and mouth disease continues to spread throughout the state, and 12 counties are reported to have been placed under federal and state quarantine. The counties quarantined are: Montour, Northumberland, Juniata, Union, Snider, Lehigh, Lancaster, Berks, Delaware, Montgomery, Crawford and Lebanon. More than 1,000 cattle have been killed in an effort to prevent the spread of the disease. The care of the epidemic is under the supervision of Dr. Leonard Pearson and Dr. Mohler of the state and government service. The disease has been reported to have been communicated to the adjoining states, New York and New Jersey.

Philadelphia.

Anonymous Gift.—The Hospital of the Woman's Medical College of Pennsylvania has recently received an anonymous gift of $500 for its endowment fund.

Beneficiaries of Charity Ball.—The receipts of the twenty-ninth annual charity ball, to be held in the Academy of Music, January 27 next, will go to the following beneficiaries: Children's Orthopedic Ward of the University Hospital, Children's Ward of the Jefferson Hospital, Kensington Hospital for Women and St. Christopher's Hospital.

Society Meeting.—At the annual meeting of the Pathological Society of Philadelphia, held October 22, the following officers were elected: President, Dr. Joseph McFarland; vice-presidents, Drs. David L. Edsall, Reisman, Kelly and Smith; secretary, Dr. Ralph S. Lavenson; treasurer, Dr. Courtland Y. White; recorder, Dr. Frederick H. Klaer; and curator, Dr. E. H. Goodman.

Campaign for Health.—A public meeting of the Philadelphia Society for the Prevention of Diseases was held in the hall of the College of Physicians November 6. The officers of the society are Dr. Edgar F. Smith, president; Dr. William W. Keen, Charles C. Harrison, LL.D., and Col. R. Dale Benson, vice-presidents; Dr. Robert N. Willson, secretary; and Dr. Jay F. Schamberg, treasurer.

Health Report.—The total number of deaths reported to the Health Bureau for the week ended November 21 was 420. This is a decrease of 33 from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 3; pertussis, 2; diphtheria, 6; consumption, 59; cancer, 18; diabetes, 3; apoplexy, 11; paralysis, 6; heart disease, 53; acute respiratory disease, 51; enteritis, 23; hepatic cirrhosis, 3; appendicitis, 5; nephritis, 44; premature birth, 12; congenital debility, 7; senility, 3; suicide, 4; accidents, 15, and marasmus, 7. There were 201 cases of contagious diseases reported, with 12 deaths, as compared with 215 cases and 32 deaths reported in the preceding week.

Personal.—Dr. Robert-Simon, Paris, delivered an illustrated lecture on "The Subcutaneous Injection of Sea Water in the Treatment of Disease" in the Polyclinic Hospital November 20.——Dr. Joseph J. Walsh, professor of the history of medicine at Fordham University, delivered an address on "Old Time Medicine and Medical Education" at the regular monthly meeting of the College of Physicians, November 30.——Dr. George W. Crile, Cleveland, Ohio, has been selected to deliver the annual Mutter lecture for the College of Physicians for 1908. He will discuss "Surgical Anemia and Resuscitation." The lecture will be delivered December 11 in the Mutter Museum of the college.——Dr. Charles A. E. Codman has been appointed chairman of a committee to investigate the subject of a business bureau for the county medical society.——Dr. B. Franklin Stahl has been appointed medical director of St. Agnes' Hospital.——Dr. W. Howard Lyle has been appointed assistant medical inspector, vice Dr. Morris H. Tindall, resigned.——Dr. Amy J. Rule, Philadelphia, has been appointed assistant physician in the State Hospital for the Insane, Norristown.

City's Milk Supply.—A symposium on "The Milk Question" was conducted by the Civic Club in Horticultural Hall November 17. The meeting was addressed by Dr. Joseph S. Neff, director of the Department of Health of this city; Dr. George W. Goler, director of health of Rochester, N. Y., and Drs. Joseph S. Evans, S. McClintock Hamil and Lawrence F. Flick. Dr. Neff, who presided, stated that 5,000 infants died in this city yearly as the result of the milk being placed in insanitary storage rooms. Dr. Neff favored a law requiring milk dealers to be licensed and thus place them under direct and continuous supervision of the Health Bureau. Small dealers, he said, were responsible for most mischief, because of their inadequate facilities for keeping the milk sanitary.

Dr. Goler gave a description of the combat in Rochester for uncontaminated milk. His lecture was illustrated with stereopticon views, showing the general insanitary housing and caring for cattle. He said that the death rate in Rochester had decreased since the fight for clean barn-yards, well-kept stables and sanitary dairies was instituted. He advocated laws that would give a state wide regulation over the preparation of milk for the market. Dr. Evans laid stress on inspection at the source of supply and of the rigid inspection of the facilities possessed by the city dealers. Dr. Hamill spoke on "Milk as a Food for Children," and Dr. Flick discussed "Milk as an Economical Food" and the part it plays in the treatment of tuberculosis patients.

GENERAL NEWS AND COMMENT.

Northwestern Medical Association.—A call has been issued to the physicians of the northwest to meet in Seattle in July next to organize an association comprising all the North Pacific Coast to include Washington, Oregon, Idaho and British Columbia. The meeting is to continue four days, and the arrangements are to be left in the hands of the committee from the State Medical Association of Washington.

Health of the Navy.—The annual report, made by the surgeon general, U. S. Navy, chief of the bureau of medicine and surgery, for the fiscal year 1908, to the Secretary of the Navy, shows a gratfying improvement in the general health as compared with last year, the respective morbidity per 1,000 being 691.40 and 787.23. The shortage of medical officers is still a source of embarrassment and occasions the overburdening of individual officers at certain stations to such an extent as to jeopardize efficiency. The surgeon general notes the services rendered by the newly appointed acting assistant surgeons. The advantage of this grade has been so pronounced that a probationary service in this capacity is being seriously considered as a requirement for candidacy in the medical corps. The navy medical school also represents a most potent influence for good. The need for a larger and more effective hospital corps and the raising of professional requirements in the case of hospital stewards are emphasized. The substantial improvement in the health of the naval forces afloat is evidence that hygienic principles and sanitary dictates are being more carefully observed. The ten principal causes of disability noted for the year were venereal diseases, injuries, tonsilitis, epidemic catarrh, malaria, bronchitis, rheumatism, gastrointestinal diseases, the exanthemata, and other infectious diseases. The surgeon general notes with regret the failure of congress to enact measures authorizing the employment of skilled dentists for service in the Navy. The report from one ship alone for 1907 includes 1,454 operations for almost every conceivable period of dental disorder. The dental corps bill contemplates thirty dental surgeons, fifteen of whom would probably be employed at sea and fifteen at various shore stations. The enactment of authority for the establishment of a corps of female nurses is a source of gratification to the Navy. It is believed this provision greatly enhances the possibility of increased efficiency in the medical department.

CANADA.

Corner-Stone of New Consumption Sanatorium Laid.—On November 11, the Lieutenant-Governor of British Columbia laid the corner-stone of a new sanatorium for incipient cases of tuberculosis at Tranquille.

Ontario Health Statistics for October.—There were 500 cases of typhoid fever in Ontario in the month of October, with 126 deaths, as compared with 50 deaths for the same month of 1907. There were 50 cases of smallpox. There are fifteen centers for the latter. The total number of deaths from all causes was 2,328, a death rate of 13.8 in the thousand.

Patent Medicine Laws.—It has been decided by the Dominion government that the patent medicine act of last parliament will come into force April 1, 1909. After that date any preparation which contains any drug or drugs dangerous to the public will have to be approved by experts of the department of inland revenue or bear a printed statement on the outside of each package that there is a deadly drug in the preparation, or else give the name of the drug.

Ontario Medical Council.—The Ontario Medical Council met in Toronto in special session during the week ended November 21. The discipline committee made a report on the case of two practitioners, but no action was taken thereon. The Council approved of interprovincial registration with all the colleges in the various provinces having a standard of education equivalent to that of the Ontario Medical Council. The Council did not favor reciprocity with Great Britain. The education committee recommended that the matriculation standard be raised 25 per cent.

Hospital News.—Kincardine, Ont., is to have a new hospital at a cost of $25,000.——During the past four years the citizens of Vancouver, B. C., have placed at the disposal of their general hospital board of management $400,000. This has so stimulated Victoria that it will place the matter for the extension of the Royal Jubilee Hospital of that city before the citizens by by-law shortly. This hospital treated 172 patients in October.——The Western Hospital, Toronto, has recently received a donation of $25,000 from a citizen of Toronto.——The ratepayers of Toronto will vote on the proposed grant of $200,000, divided equally between the General, St. Michael's, Grace, and the Western hospitals, at the coming municipal elections January 1.——The St. Catharines (Ont.) Hospital treated 516 patients in its last fiscal year. A new building is to be erected shortly, for which there is already in hand nearly $10,000.

Tuberculosis Exhibition in Montreal.—The formal opening of the exhibition of the Montreal Tuberculosis League took place November 18, Earl Grey, the Governor-General, presiding. The exhibition is the joint work of the English and French-speaking physicians of the city. Each year there are in Montreal 1,000 deaths from tuberculosis; in the province of Quebec about 3,000; in Canada, about 13,000. The annual loss to the Dominion is thus estimated at $39,000,000. Dr. J. George Adami, chairman of the Exhibition Committee and Dr. E. P. Lachapelle, chairman of the Executive Committee of the Montreal League invited the Governor-General to open the exhibition. The exhibition is largely due to the industry of Dr. D. Fraser Gurd; and the exhibits principally come from the board of health of Quebec, from the health department of Ontario, from the health departments of New York, Rhode Island, and Massachusetts, from the Irish Tuberculosis Association, and from the Dental Association of Quebec.

Personal.—Dr. L. C. Prevost, Ottawa, is accompanying Sir Wilfred Laurier, Canada's Prime Minister, on a trip to the Southern States.——Dr. C. D. Parfitt, for six years physician in charge of the Muskoka Free Hospital for Consumptives, Gravenhurst, Ont., and for the last seven months resident consultant to that institution and the Muskoka Cottage Sanatorium, has resigned.——Dr. Gordon has severed his connection with the Muskoka Cottage Sanatorium.——Dr. Albert H. Calfield, Toronto, has been appointed pathologist to the Muskoka Cottage Sanatorium.——Dr. W. S. Lemon, Toronto, has been added to the resident staff of the institution.——Dr. George D. Porter, Toronto, has been appointed provincial secretary of the Canadian Association for the Prevention of Tuberculosis.——Dr. Ernest Jones, Toronto, has been appointed pathologist and neurologist to the Provincial Hospital for the Insane, vice Dr. J. G. Fitzgerald, who has resigned to accept a position in Boston, Mass.——Dr. W. T. Wilson, assistant superintendent of the Toronto Provincial Hospital for the Insane, has been made superintendent of a similar institution at Cobourg.——Dr. Edward J. Stubbs, Stratford, has started on a trip around the world, stopping en route at Rochester, Minn.——Dr. Francis G. E. Pearson, medical health officer of Brantford, is seriously ill with septicemia due to an operation wound.——Dr. C. K. Clarke has been appointed dean of the medical faculty of the Toronto University, vice Dr. Richard A. Reeve, resigned.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Nov. 21, 1908.

Sir Jonathan Hutchinson.

Among the birthday honors conferred by the King is a knighthood for Mr. Jonathan Hutchinson in recognition of his distinguished services to medical science. The honor came as a surprise to the profession, for it was well known that the reason Mr. Hutchinson had not received any of the titles that have been conferred on lesser men was that he would not accept them. Forty years ago he refused the title that has now been conferred on him. As he is of Quaker origin his refusal no doubt was due to the distaste of that sect for such distinctions; possibly, also, his philosophical mind is above such things. He has now, however, owing to the wishes of his family, accepted a knighthood. The medical journals state that the conferring of this honor on him will be viewed by the profession with satisfaction; but the general feeling is rather one of surprise at the inadequacy of the distinction. To any one acquainted with Mr. Hutchinson's work nothing less than a peerage can seem an adequate recognition. One of the few great clinicians of all time, he ranks with Sydenham, Graves,

Trousseau and Charcot, and in versatility he has surpassed even these. No other writer has made contributions of the first importance not only to general medicine and surgery, but such highly specialized subjects as dermatology and ophthalmology. Professor Osler has well described him as the only great generalized specialist which the profession has produced. With the minute knowledge of the specialist he has combined a broad and philosophic view of every subject, and has, in addition, made the various branches of medical science throw light on one another in a manner that has never been equaled.

Plague in Liverpool.

The fatal case of plague in Liverpool reported in the letter of November 7, has been followed by two others. The first victim was a man who worked on a coal barge. Now a man and his wife who occupied his cabin for the purpose of waiting on him have been attacked. Ever since the first case was found to be plague they have been kept under close observation. They were conveyed to the port sanitary hospital, where the man died, but his wife is recovering. The medical authorities have not yet determined how the disease originated. The barge was used for coaling vessels, chiefly coasters, in dock. It is supposed that the infection must have been brought from some other port. The names of the vessels coaled by the barge and the places from which they came have been communicated to the health authorities of the places. Close inspection of the barge has dispelled the idea that the disease was spread by a plague-carrying rat. Every precaution, including isolation of the patients and watching of all known contacts, has been taken. A large number of rats have been killed in the docks and examined in the municipal laboratory, but plague has not been found in any of them up to the present date.

Exemplary Damages from a "Face Specialist."

Catharine Lavin, a "face specialist," known to the public as Madame August, issues advertisements in which she professes to "rejuvenate the face," to remove smallpox marks, freckles, liver-spots, birth-marks, etc., by a "marvelous treatment." Attracted by the advertisement a woman went to her with three small-pox scars on the face. These Lavin treated with some preparation which turned the scars black and afterwards with plasters which caused the spots to coalesce into a spreading ulcer. An action for damages was brought against Lavin and she was mulcted in damages to the extent of $2,500.

Declining Marriages and Large Decrease in the Infantile Mortality.

The quarterly returns issued by the Registrar-General show that during the three months ending September 30, 295,052 births and 146,239 deaths were registered in the United Kingdom, the natural increase of population, therefore, being 148,813. The births registered in England and Wales were in the proportion of 26.6 per 1,000 of the population, which was 1.6 below the mean rate of the preceding ten third quarters of the year. The deaths during the same period were in the proportion of 12.8 per 1,000, or 2.7 below the mean rate of the preceding ten third quarters. The deaths of infants under 1 year were in the proportion of 126 per 1,000 births as compared with an average of 175 in the ten preceding third quarters. The marriage rate for the quarter ending June 30 was only 16.7 per 1,000 as compared with an average of 17.1 recorded in the second quarters of the preceding ten years.

First Report of the Sleeping-Sickness Bureau.

The formation of a sleeping-sickness bureau in London for the collection and distribution of information on sleeping sickness was announced in a previous letter (THE JOURNAL, June 6, p. 1914). The bureau has issued the first number of its bulletin, which gives ample evidence that it will prove a valuable publication. The present number is entitled "The Chemotherapy of Trypanosomiasis," and it summarizes the various attempts to cure the disease in man and animals. The editor of the paper, Mr. A. G. Bagshawe, concludes that the employment of any one trypanocide by itself has ceased to be justifiable and that an alternation of such agents should be used. After one drug has been used for some time the trypanosomes become immune to it, but they can then be killed by the administration of some other drug. Certain experiments are described. An animal was infected with trypanosomes and treated with a trypanocide. The trypanosomes disappeared only to reappear in a few days. The same drug was again administered and the trypanosomes eliminated, but they reappeared sooner than before. The treatment was continued until the drug ceased to affect the trypanosomes and the animal died. When these trypanosomes were transferred to another animal of the same species the same drug was found from the first to be powerless. This principle was found capable of further extension. When the trypanosomes had been thus fortified in a mouse against the action of a drug, they were transferred through as many as twenty generations in rats and in every case it was found that the parasites had lost their immunity to that drug, but when they were re-transferred from the last of the series of rats to a mouse, the resistance to the drug at once became manifest. It seemed, therefore, that the individual animal played a part in the elimination of the parasites.

Tuberculous Milk in London.

During the past three months, of 92 samples of milk examined by the health department of the London County Council, 22—23.9 per cent.—proved to be tuberculous. Ten of the cows supplying the milk were found to be tuberculous and the owner undertook not to send any more milk to London from these cows, but the report does not state that he would not send it elsewhere—a procedure not impossible in the present chaotic state of the law!

Prevention of Malaria in Mauritius.

Prof. Ronald Ross was requested by the government to visit Mauritius and report on the prevention of malaria, which is very prevalent in that island. He has issued an important and interesting report on the subject, in which he recommends the following: 1. A periodical spleen census should be taken of the children. 2. In schools and on estates children with enlarged spleens should be treated with quinin. 3. Occasional house protection should be carried out. 4. Mosquito reduction where advisable should be attempted. The experience of Port Said, Klang, Port Sweetenham and Panama encourage the belief that the disease will be brought under control in this island.

Impure Soda Water.

In investigating a case of diphtheria, Dr. Collingridge, health officer of the City of London, found reason to suspect some soda water which had been purchased in a city shop. Bacteriologic examination revealed an enormous number of microbes containing cocci, sporing bacilli and large numbers of a small Gram-positive non-motile bacilli which in shape resembled diphtheroid microbes. There was no evidence that these were diphtheria bacilli, though they evidently belonged to that large class of "diphtheroid bacilli." These results showed that carbonic acid, even when under pressure, exercised little, if any, destructive action on the bacilli. A general inquiry into the purity of soda water was then made by Dr. Klein, the bacteriologist. He found that out of 36 samples, 27.7 per cent. were pure; 19.4 per cent. were fairly pure, and 52.7 per cent. were impure. Inspection of the factories showed that the source of the contamination was found usually in defects in the system of bottle washing and exposure of the water to risk of contamination in wooden tanks and absence or imperfection of coverings for the receptacles containing water. The manufacturers have now undertaken to carry out recommendations made by the health officer for securing purity of soda water. Regulations have been issued under which mineral water manufacturers must (1) obtain a certificate from the health officer of the district to the effect that their premises are in satisfactory condition; (2) they must have a bacteriologic analysis made of the water supply or when a public supply is used, a certificate of the authorities supplying the water; and (3) they must also have a bacteriologic analysis made of the finished goods. Other regulations include, in addition to those just mentioned, efficiency of filters, cleanliness of rings and stoppers, proper material for storage (wood is considered quite unsuitable), methods of bottling, washing, etc.

Critical Position of the Polyclinic.

The Medical Graduates College and Polyclinic is in a critical position. After a useful career of about ten years, it is found the membership has dropped from about 800 to 500. This is not a result of any falling off in efficiency of the institution, but is really due to the college's success, which has aroused in London an interest in postgraduate instruction. The hospitals generally have taken up postgraduate work, and no fewer than three of them—the West London, the Sea-

men's Hospital, Greenwich and the North Eastern (Prince of Wales') Hospital are devoted entirely to it. These rival institutions have had the inevitable effect of withdrawing support from the Polyclinic, over which they have the great advantage of being hospitals. The Polyclinic has no beds; the patients shown there, though exemplifying some of the rarest forms of disease, consist entirely of those who are not too ill to be sent for consultation. The sum derived from the annual subscription ($5), with the fees from the tutorial classes, has never been sufficient to pay the expenses. The deficiency has been made good by voluntary increased subscriptions from a limited number of the members. Unless some new scheme can be devised there is great danger of this useful and unique institution coming to an end.

PARIS LETTER.

(From Our Regular Correspondent.)

PARIS, Nov. 19, 1908.

Conservative Treatment of Pelvic Affections.

One of our most celebrated surgeons, Dr. Richelot, has just made a communication to the Academy of Medicine on the abuse of surgery in gynecology, especially in the cases of "nervous arthritic patients," uninfected, without notable lesions, but affected with uterine congestion, dysmenorrhea, uterine catarrh, hemorrhages, etc. With such patients, hot water, employed in the form of vaginal injections and general and perigastric douches, gives excellent results, provided it is employed according to a rigorous system. It is not sufficient to make injections of two liters (two quarts) of water at 45 C.; it is necessary to insist on abundance of water, a high temperature, and regularity of injections. To obtain the best results the vaginal injection should consist of 80 to 100 liters (21 to 26 gallons) of water. This is the vaginal douche as given at the springs of Luxeuil. The general douche ought not to be reserved exclusively to neurologists; the gynecologists may also make advantageous use of it in localized affections of the true pelvis. For this purpose hot-water therapy requires, to be sure, special apparatus, but the difficulty in using—which is, after all, common to all physical agents—is no reason for underrating its value. The method has two principal indications: in uterine congestions, it renews the existence of those nervous arthritic patients whose pains, hemorrhages and dysmenorrhea have withstood everything; in pelvic infections, in which operation appears to be obligatory, but in which there are strong reasons for not operating, such as the youth of the woman or her desire to have children, hot-water therapy is capable of bringing about unexpected complete resolutions. And, even if the relief of pelvic congestion does not cause the disappearance of pains or the complete resolution of tumefactions of the adnexa and of pelvic exudates, it is still useful in diagnosis, to determine the true indications, proper procedure and to limit surgical intervention.

The French Red Cross.

The French Red Cross is made up of three societies for assistance to wounded soldiers, the Association of French Ladies, the Union of the Women of France, and the Society for Aid to Wounded Soldiers. The latter, which is the oldest of the three, having been founded in 1865, has now 55,000 members. It is now building a hospital-school where its members may perfect their practical education as nurses. The principal pavilion, which is the only building as yet completed, was turned over to the president of the society, Marquis de Vogüé, on November 14, by Professor Guyon, president of the medical commission and of the instruction of the Red Cross. Up to the present the ladies of the Red Cross have attended only the dispensary-schools, which taught them to make dressings but left them ignorant of the care to be given to wounded men in hospitals. The construction of the hospital cost 550,000 francs ($110,000) and was paid for by by gifts and public subscriptions without drawing on the war fund of the society, which amounts to 6,000,000 francs ($1,200,000). Apart from the relief distributed to the wounded in the Crimean, Italian and Franco-Prussian wars and the colonial expeditions, the society has sent 1,233,447 francs ($246,689) in relief to foreign red cross societies, for the Russo-Turkish, Spanish-American, South African and Russo-Japanese wars.

In case of war, the society would be able to furnish nearly 3,000 nurses and 26 auxiliary field hospitals attached to the various corps of the army, each one containing 100 beds. In case of mobilization it could, moreover, put at the disposal of the Minister of War 538 auxiliary territorial hospitals, with a total of 20,602 beds. It also has 88 railway station infirmaries, in the most important stations of our various railway centers, the purpose of which is not merely to give medical and surgical care to the sick and wounded passing through the station, but to give temporary nourishment and care to those who are unable to continue their journey.

Election of Dr. Quénu to the Academy of Medicine.

Dr. Quénu, professor of operative medicine at the Paris Medical School and surgeon of the Cochin Hospital, has been elected titular member of the Academy of Medicine, in the section of surgical pathology, to fill the place of Professor Terrier, who died last April.

Museum of Hygiene.

Since 1890, there has existed in Paris a little museum of hygiene, containing among other things, the exhibits which figured in the Paris pavilion of hygiene at the exposition of 1900, and which have to do especially with the sanitation of dwellings, the emptying of latrines and sewers, etc. There is now a plan to complete and to install the collections so as to make of them a real model museum of hygiene and sanitation. It will comprise the twelve following sections: Air and light (composition, meteorology; lighting of the city; lighting, heating and ventilation of the house); water (composition and bacteriology; flowing waters of rivers and springs, ozonation; distribution, filters, private baths, etc.); food and clothing (composition of foods, nutritive value, adulteration, sterilization of milk; hygiene of clothing, impermeability, etc.); preventive hygiene (disinfection, measures against fire, materials of construction); hygiene of infancy (feeding of infants, gymnastics); establishments such as hospitals, asylums, soup-kitchens; hygiene of special establishments (arrangement, heating, etc., of barracks, prisons, schools, cheap houses); residues of life (cemeteries and cremation; household refuse; rain-water and slops, night soil; sewers; emptying of used waters); public conveyances (omnibuses and fiacres; neatness, ventilation, disinfection, cleaning, etc.); smoke; demography; library.

Declaration of Contagious Diseases.

Dr. Widal's recent report to the Academy of Medicine on epidemics, took up, among other questions, that of compulsory declaration of contagious diseases. The law of 1902 requires this declaration of the attendant physician; but the great majority of physicians consider the requirement inconsistent with the superior obligation of professional secrecy. This law being about to undergo revision, the Academy of Medicine has been invited to give advice in regard to modifications. Widal contends that the physician's obligation should be limited to making the diagnosis, leaving to the head of the family or to the landlord, if the patient has no family near him, the duty of making the declaration to the authorities. The Academy, however, finally adopted the proposition to make the physician and the head of the family jointly responsible for the declaration. Practitioners regret this decision, which practically restores the physician's complete responsibility, since he will be subject to prosecution if the head of the family neglects his duty, which will doubtless happen frequently.

Criminality and Alcoholism.

For several years, criminality has increased in truly disquieting proportions. The principal cause appears to be alcoholism. Below is an instructive table showing that, since the law on free traffic in liquors, the increase in the number of murders, suicides and cases of insanity has been almost parallel to the increase in the consumption of alcohol.

	1881.	1905.
Number of licenses	367,829	473,593
Hectoliters of alcohol manufactured	1,822,000	2,600,000
Murders brought to justice	182	274
Murders not brought to justice	344	496
Suicides	6,741	8,932
Cases of insanity	47,858	71,547

BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, Nov. 14, 1908.

The Temperance Movement.

A few weeks ago the German League Against the Misuse of Spirituous Beverages celebrated its silver jubilee. The conditions now are undoubtedly more favorable than when the society was founded. The combined efforts of physicians, national economists, public officials, etc., have resulted in a marked reduction in the consumption of alcohol in recent years. One can only rejoice at this fact. It is true that a large part of the national wealth is still wasted in the con-

sumption of intoxicating beverages every year, wealth that might have been put to better uses. While we do not take the stand of the total abstainers, that every drop of alcohol is a drop of poison and that, therefore, all use of liquor on account of its admittedly great dangers, should be most energetically opposed, yet, on the other hand, it can not be denied that, even in medicine, the importance of alcohol as a stimulant and nutrient has been considerably overrated. Until the beginning of the campaign against the abuse of alcohol the consumption of beer and wine was almost a measure of the national feeling (*Massstab für die nationale Gesinnung*), especially in academic circles. To-day this is happily changed. One need no longer feel ashamed of a moderate use of alcohol or even of total abstinence either in private circles or in the inns. Still there remains much to be done in this direction. As the renowned hygienist of Munich, Professor Gruber, showed in a recent address on the alcohol question, beer is still drunk very extensively. In 1905, 129 liters (33 gallons) per capita were used by the German people, and even if the use of brandy has diminished the consumption of absolute alcohol amounts to 9.6 liters (4½ gallons) per capita per year. Even now 3,000,000,000 marks ($720,000,000) are spent for alcoholic beverages in Germany yearly, and many workmen's families spend from one-fifth to one-fourth of their earnings for such drinks. In Munich, which is, indeed, the greatest beer city of the world, immense amounts of beer are still consumed. However, even here, gratifying progress is not to be denied, for in 1907 the consumption of beer was less by 200 liters per head than it was twenty years ago.

It is evident that the authorities are supporting the campaign against intemperance as far as possible. The organs of the social workmen's insurance societies, the railroad managers and the municipal officials are taking part in this campaign by issuing appropriate regulations, establishing places for the sale of alcohol-free drinks, and by disciplinary punishment of drunkenness and the discharge of intoxicated employés. Some railroad managers have lately installed in the workshops automatic vending machines for bouillon capsules, which are gladly used by the workmen to prepare for themselves, with the aid of hot water, a palatable broth.

For a long time apparatus for furnishing Seltzer water and for making coffee have been placed in the workshops. The use of milk, tea, coffee and nutritious broth is constantly increasing among the railroad employés. The traffic in these articles is either in the hands of the company or in those of the workmen's societies, which apply the profits to benevolent purposes.

It is to be hoped that the cause will make further progress. At any rate, we have already reached more advanced ground than our neighbor, Russia. According to a statement of the *Petersburg medizinische Wochenschrift*, there are sold from the three depots in St. Petersburg alone—in Russia the sale of brandy is a state monopoly—about 3,928,000 kegs (*Eimer*) of brandy; 445 official brandy shops attend to the retail trade in addition to about 2,900 private establishments of various sorts. As is easy to understand, the consumption of the poorer sorts of brandy is markedly greater than that of the better. Denatured spirits are very often drunk either after chemical treatment or even unaltered. Under Russian conditions it is not strange that the officials in Warsaw recently forbade the delivery of a course of lectures organized by a temperance society on the injurious effects of alcoholism. A reduction in the amount of liquor consumed would check the flow of the fountain now yielding an income for the government and for the venal officials.

Progress of the Public Health in Germany.

It is not strange, in consideration of the persistent efforts in all the various departments of hygiene, that the public health in our country has made remarkable progress. This is evident in the reduction in the number of deaths in proportion to the population. This reduction is especially noticeable in the large cities, where in the last thirty years a reduction of the mortality of from 25 to 30 per cent. has been recorded. To be sure, this diminished mortality does not affect the period of infancy, a fact to which we called attention in a previous letter. According to statistics recently issued by the imperial statistical bureau, the expectancy of life for all ages has materially increased in the last decades. A child of 10 years has to-day the prospect of living 5 years longer than he had thirty years ago; a man 20 years old, about three years; a woman of 20, about three and a half years. Even in the case of a man of 70, the average expectation of life is now about five months and that of a woman of 70 about six months longer than formerly.

Pharmacology

LLOYD'S CONSUMPTION CURE.

The Latest Developments in the Exploitation of J. Q. Lloyd's Many Named "Specific."

In THE JOURNAL, November 21, we described J. Q. Lloyd's "scheme to work the doctor" by means of his "consumption cure," Aicsol or Anti-Phthisis (Lloyd) or Lloyd's Specific, as it has been called. His latest scheme, it will be remembered, was to put the "cure" on the market under still another name and sell it "direct to consumptives" "on the mail-order plan." We learn that its new "mail-order" direct-to-the-public name is Re-Stor-All—a cognomen which gives it one more claim to classify with "patent medicines" of the Pe-ru-na type and other hyphenated nostrums.

ALSO A CURE FOR PARALYSIS.

From one of the testimonials that Lloyd is going to send "direct to the public," we learn that Re-Stor-All, *alias* Aicsol, *alias* Anti-Phthisis, *alias* Lloyd's Specific, not only cures tuberculosis, but also paralysis. In this interesting and instructive testimonial, dated October 27, a St. Louis lawyer states that he took the first bottle of Re-Stor-All "on the 26th day of July." (According to Mr. Lloyd, Re-Stor-All will not be on the market before December 1!) After curing himself of tuberculosis this lawyer thought that this preparation might be good for some other conditions—and in this conjecture, it seems from his report, he was not disappointed:

> "I advised my mother, who is 70 years of age, and who was afflicted with paralysis of one side of her face and her right arm for 20 years, to try Re-Stor-All. Her face, which had been drawn to one side and one eye-lid which had been dropped down, and also her right arm, was *completely cured by the use of one bottle.*" —[Italics ours.—Ed.]

We shall be surprised if Mr. Lloyd, with his highly developed business instinct, does not advertise this multi-christened preparation under still another name as a cure for paralysis. The remedy unquestionably possesses great potentialities, if not of a remedial, at least of a financial nature.

LLOYD'S HEADQUARTERS.

The following letter from a St. Louis physician who paid a visit to the "headquarters" of this concern is enlightening:

ST. LOUIS, Nov. 21, 1908.

To the Editor:—I called this morning at the place of the Judd Q. Lloyd Chemical Co. at 548 DeBaliviere Avenue. After telling Mr. Lloyd that I was interested in his medicine and that I had heard a great deal about it, he gave me a sample bottle of Aicsol. He told me that the "formula" was correct, and that each ingredient was in the proportions as stated on the bottle. He said that the secret of the medicine was in the way of combining the different ingredients and as that was his discovery he would not disclose it.

As he thought that I had some money, he then tried to sell me some stock and gave me an "inside" to his scheme. He said that the articles for incorporation were now at the state capital and that they were going to reorganize a new company and call it the Re-Stor-All Chemical Co., and that they were going to put up Re-Stor-All, which is to be sold to the laity.

On questioning him, he said that it was the same thing as Aicsol, which was intended for physicians' use. He said that the way they were going to reach the public was through the daily press, and that they were going to advertise in the daily newspapers of all the large cities, a half-sheet every day, and the laity reading these will send for treatment.

He said that they were going to charge $5.00 a month, payable in advance, and in passing he said our profit would be $4.50. I suggested that all the people that sent for medicine would not have consumption, and he replied that any persons that had had a brother or friend die of consumption, if they only had a pain in their stomachs, would think that they, too, had consumption and would send for a bottle of his medicine.

After the new company was in operation they intended, Mr. Lloyd said, to start a tent colony for tuberculosis a short distance from his so-called laboratory. In connection with this he said that a certain high federal officeholder of the city

of St. Louis was interested in the company, and that he had some land that he wanted to sell the company.

As a further inducement, he told me that if I took stock in the company he would give me a position in his office, as he needed a physician in the office to answer letters from the people, to prescribe doses and the like, and also to visit his tent colony. He said that he was not registered in this state and for that reason he needed a registered physician. He showed me a letter he got from a patient with five dollars enclosed for one month's treatment.

On request, he showed me through his "laboratory," a room about thirty by forty feet, which was about one-fourth filled with copies of the *St. Louis Star* of Nov. 7. He showed me a brick affair about six by ten feet square which looked like an oven, and this he told me contained a copper retort in which he mixed his medicine. There was a gas range in this room also, on which were two kettles. There were a couple of barrels which, he said, contained the finished article, and there were a good many packages put up. In the same room were twenty-four or twenty-five girls wrapping up this edition of *The Star* and sending out circulars to physicians about taking stock.

In the yard was an old tent in which he said a consumptive lived, but who was shining shoes the day I called. In a yard were eight rabbits and one guinea-pig. He said there were more of the pigs under the ground. He showed me a dog, "Kate," which he said he had cured of consumption four times; there was also another dog there. In a small shed were three monkeys, one, which was a little thin, he said had consumption. He also had a chicken coop with several chickens in it. He said that he mixed chicken's blood with tubercle bacilli and injected this to produce tuberculosis in the animals. In the yard were also six or eight barrels that appeared to be empty, and I think he said that tar came in them.

In his office were twelve stenographers, all very busy writing letters of some kind. He said that he was sending out one hundred thousand marked copies of the *St. Louis Star*, and it looked fully that much. He also said that he was not doing any work with animals now nor was he experimenting, as he had done all that, and now he was busy putting up the medicine. ——— ———, M.D.

PURCHASING THE PRESS.

In his letters to physicians, referring to the "article" which appeared in the *St. Louis Star*, Lloyd emphasizes the fact that "this write-up is given us *gratis*." Evidently this is the "free enlargement" scheme adapted to the exigencies of journalism. Who has not been approached by the suave gentleman who offers to enlarge your photograph *gratis*—providing you are willing to pay a nominal sum to cover the cost of "our handsome gilt frame and the expense of packing?" What enterprising newspaper, unhampered by an inelastic journalistic conscience, is there but would be willing to furnish a write-up "gratis"—providing the beneficiary thereof was willing to contract for 100,000 copies of the issue which contained it? Such methods of subsidizing the press may seem more crude than those adopted by the Proprietary Association of America, but possibly they are just as effective.

THE CURE NOT A CURE.

It is, of course, unnecessary to deny that this or any other of the hundreds of "consumption cures" on the market will cure the disease, or is of any value. The fact is, practically all of these "cures" are founded on heartless cupidity and downright fraud; occasionally some ignorant enthusiast honestly believes he has something of value, but these self-deluded exploiters are rare; as a rule, the promoters are downright swindlers.

In the earlier stages of his operations, Lloyd was sufficiently unsophisticated in the *finesse* of "patent medicine" exploitation to publish the names and addresses of physicians who had written favorably concerning his preparation. A riper experience in the nostrum business has taught him that such testimonials prove to be boomerangs; hence we now find all physicians' names excluded, because, as Lloyd artlessly says, "medical ethics do not permit the use of physicians' names." We investigated some of those earlier cases in which it was possible to make inquiries and to get at the facts. In every instance, as might be expected, not only was the "cure" a failure, but the physicians who had made the first reports had lost their enthusiasm.

Said one:

"I can not see that the J. Q. Lloyd remedy for tuberculosis gave me any results that were satisfactory. I do not care to try them longer."

And another:

"Anyone who allowed himself to be drawn into a 'skin game' such as this evidently is, should not have the confidence of other practitioners. . . . . I can simply state through my desire to better my t. b. cases I have been made the assistant of a fake."

And a third:

". . . . . the two patients spoken of did do well for a while on the Lloyd treatment, but it was only temporary, both going the way of all such cases, to the grave."

And these expressions of opinion, it should be remembered, are from men who, in the early enthusiasm of trying a new "remedy" had written praising Lloyd's specific.

WHAT IT ALL MEANS.

The promoters of such "cures" know full well how eagerly the hapless consumptive grasps at any therapeutic straw—useless or fraudulent; they also know that there is an inbred belief on the part of the laity that "medicine" will "cure" consumption; they know, too, that the panic fear of the consumptives' relatives will make them believe that every "pain in their stomach" is consumption, and that they, too, "will send for a bottle." But knowing all this, such promoters are willing to make capital out of the fear, the ignorance and the pitiable conditions of those afflicted with tuberculosis. They are in the business, frankly and baldly, for the dollars and cents; but what shall be said of physicians who lend the weight of their names and the authority of their profession that they, too, may soil their hands with the tainted money of the nostrum-exploiter?

And this is the disgraceful thing—for us—in this disreputable business: that some physicians are partners in it. It seems hardly believable, but we have sufficient evidence to warrant the conclusion that at least some physicians have been so misled as to invest in the stock of this concern. Have the glowing advertisements of certain proprietary houses which offer for sale their "stocks" and "bonds" to physicians so hypnotized the medical profession that some of its members are willing to become financially interested in the exploitation of that cruellest of fakes—a consumption cure?

In the words of Samuel Hopkins Adams: "Every man who trades in this market, whether he pockets the profits of the maker, the purveyor or the advertiser, takes toll of blood. He may not deceive himself here, for here the 'patent medicine' business is nakedest, most cold-blooded. Relentless greed sets the trap and death is partner in the enterprise."

More British Nostrums Investigated.

In continuing its articles on "Certain Secret Remedies," the *British Medical Journal*, Oct. 17, 1908, p. 1193, takes up preparations for rupture, considering Rice's treatment for rupture and the "Healine" treatment. As these are not sold to any extent in this country information regarding them is of minor importance to us, but they illustrate the usual methods of nostrum-makers. Rice's treatment pretends to furnish a "developing lymphol" which will enable Nature to repair the breach in the wall. According to the advertisements, the "developing lymphol—Nature's true assistant"—is said to be "a vitalizing and restorative application that is absorbed into the tissues through the skin pores, just as rain-drops sink into the ground to soften the earth and keep it fertile." The company furnishes a mechanical appliance to restrain the outbreaking intestines while the "lymphol" is working. The appliance is supplied with the "lymphol" at prices varying from $5 to $21.50, according to grade. The "lymphol" alone costs $4 for a four-ounce bottle, the cost of which is estimated at 18 cents. According to the *British Medical Journal*, analysis showed the "lymphol" to consist of capsicum resin and essential oils of origanum, peppermint and spearmint, dissolved in alcohol. The results of the analysis of Healine were mainly negative.

Correspondence

The Specificity of Complement Fixation.

CHICAGO, Nov. 22, 1908.

To the Editor:—Your editorial on the above subject (November 21) has unfortunately not rendered quite clear the present status of this question. The validity of the principle of complement fixation itself (discovered by Bordet) has been amply confirmed by numerous observers. This has furnished a means of identifying various substances with which an organism may be invaded and against which it reacts. The scope of its applicability extends beyond the detection of bacteria and their products to other substances, as proteids, lipoids, etc. It is specific in every sense to a particular antigen (and probably to a particular group of antigens) and the serum containing the corresponding antibodies.

It has become a matter of history that the complement fixation in the serum reaction for syphilis, as was evident in the early works of Fleischmann and myself, does not arise from the interaction of the specific cause of syphilis and its corresponding antibodies, but that it occurs from the fact that there are certain substances present in the blood of syphilitics, not contained in non-syphilitics, which will unite with the extracts of luetic and normal organs, and with certain lipoids, as lecithin, the sodium bile and salts, etc., and in so doing anchor complement.

It was early demonstrated by Landsteiner that the blood of animals inoculated with *Trypanosoma equiperdum*, in the presence of organ extract and complement, caused fixation of the latter. He suggested that it might be found that the blood of patients suffering from infections produced by trypanosomes, spirochetes, etc., might likewise cause a deviation of complement, but this could in no wise lessen the practical value of the serum reaction for syphilis, as these parasites represented infections which could not be confused with syphilis; on the contrary, that this really broadened the scope of the reaction, as suggested by Wassermann, to other infections which would not come into consideration from a differential standpoint with syphilis.

Reports concerning the result of the reaction during a brief period following the eruptive stage of scarlet fever, in view of the above experiences, have suggested the possibility of scarlet fever being caused by a spirochete, thus supporting the view of a group-specificity of the reaction. There have been considerable differences of opinion as to the result of the reaction in scarlet fever. These are attributed, as I can confirm, to differences in the antigens employed. The inhibition of hemolysis in these cases is slight and simply emphasizes the necessity for caution under other circumstances in interpreting slight inhibitions of hemolysis.

The experiments of Wolff-Eisner and Ascher in regard to complement fixation in tuberculosis, which had previously been thoroughly threshed out by Wassermann and by Morgenroth and their pupils, can hardly be looked on as having any bearing on the syphilis question. These are made with a view to determining whether it was possible to demonstrate the presence of antituberculin in the serum of patients with tuberculosis, who had not been treated by tuberculin. This they thought they were able to show, but it is probable that the quantities of antigen (tuberculin) used (0.5 c.c.) were often sufficient of themselves to produce an anticomplement action, something which happens with organ extracts when they are employed in too large quantities or too great concentration.

The comment that the blood of syphilitic patients, pneumonia patients, etc., gave the complement-fixation reaction with tuberculin, but that the blood of normal individuals always reacted negatively, suggests a point on which we are not all equally clear. A positive reaction in immuno-diagnostics indicates a constitutional reaction against a definite antigen. A positive reaction may be expected as long as an active immunity obtains, irrespective of what other diseases exist. Hence patients with syphilis might give a tuberculin reaction, because they are or had at some time been infected with tuberculosis; and similarly patients with tuberculosis might give a syphilis reaction.

The value of the serum reaction for syphilis, instead of being lessened by the enormous amount of experimental work done in connection with it, has been constantly reaffirmed. It has become an established immuno-diagnostic test for syphilis in Europe. The attacks this reaction has withstood in the past two years on the Continent will probably be repeated here, but it is to be hoped, as in the former instance, that they will be founded on actual experiences with it.

WILLIAM J. BUTLER.

[COMMENT.—It would seem that the writer of the above letter has himself conceded the main question at issue, namely, the lack of specificity, from the standpoint of disease, of the complement-fixation reaction with certain antigens. As to whether or not such lack of specificity impairs the diagnostic value of the Wassermann syphilis reaction, the editorial referred to was intentionally somewhat non-committal. The statement cited by Dr. Butler, however, that the other diseases in which a positive reaction is obtained are such as could not be confused with syphilis, is scarcely accurate, particularly in the case of yaws.

In regard to the work of Wolff-Eisner and Ascher, it is improbable that their antigen alone sufficed to prevent hemolysis, inasmuch as no inhibition was obtained when the antigen was used in the presence of normal serum. The authors themselves state that "the tuberculin employed prevented hemolysis slightly only in quantities from 0.5 c.c. up. This effect can, therefore, be neglected with the dilutions used." Dr. Butler's suggestion that the positive reaction obtained by them in cases of various non-tuberculous diseases might be due to a previous or coexisting tuberculous infection, is of course a possibility. It surely would be a remarkable coincidence, however, were all their pathologic subjects to have a tuberculous history, and their normal subjects to be free from that infection!

Finally, the alleged unfortunate failure of the editorial to render quite clear the present status of the question is perhaps unavoidable in view of the lack of clarity of the present status of the question itself.—ED.]

Psychotherapy.

CHICAGO, Nov. 20, 1908.

To the Editor:—The letter by Dr. Jacobson in THE JOURNAL, Nov. 14, should receive the serious attention of the profession. The endeavor to establish a higher grade medical curriculum, as well as the efforts to encourage a better class of young men to take up the study of medicine, no doubt will bear fruit ere long. The cheap medical college will then die a natural death and believers in physical culture, Fletcherism and similar cults will learn the real truths about right living. The problems facing the profession to-day, however, are of different nature, the pseudoscientist cults—church clinics, Dowieites, new thought, eternal progress, spiritualistic healers, etc.—are the real obstacles that confront the profession and those that must be dealt with intelligently ere long.

In my opinion there is but one way to solve these problems, and that is by encouraging the scientific study of the principles underlying all this class of phenomena. Psychology is now receiving the attention it deserves. Psychic phenomena, which constitute the real underlying basis of all the above named cults, are still largely tabooed by the scientist in America. In Europe, however, many eminent physicians and practically every scientist is interested in this subject. The facts in relation to them are no longer doubted and it is to be hoped that ere long some scientist will make known some of the laws that control these manifestations. All knowledge is gained by observation, and though the problems presented seem insurmountable the rule laid down by the late Lord Kelvin in 1871 holds good now as it has during the past thirty-five years; he then said: "Science is under bonds, by the eternal principle of honor, to look fearlessly in the face of every problem that is presented to her."

I am firmly convinced that the scientific investigation of psychologic problems ultimately will be of great benefit to humanity and a practical help to the honest seeker after truth. The time is ripe for the intelligent, thoughtful man of science to encourage the study of this phenomenon with the same care and consideration that has characterized his

research into the fields of biology, pathology, bacteriology and chemistry.

The amount of literature on these subjects in practically all the popular magazines is paving the way for a greater field for the charlatan than he had ever dared to hope for.

DANIEL S. HAGER, M.D.

TACOMA, WASH., Nov. 26, 1908.

To the Editor:—Dr. Jacobson's letter, in THE JOURNAL November 14, appeals to me as very rational. It must be conceded that the very fact of the existence of so many well-patronized irregular methods of treatment reflects on the adequacy of results at the hands of physicians. From staid old Boston to happy-go-lucky Tacoma or Seattle the irregulars are profusely supplied with material for the laying on of hands and the exercise of faith. They have existed too long and have done too much service to be longer derided; the half-truth of their dogmas must be acknowledged.

Of all the efforts, genuine or counterfeit, to fill the gap the recent movement in Boston with the Rev. Dr. Worcester at its head probably is recognized by those acquainted with its intricacies as the nearest to the ideal yet devised. With the diagnostician's verdict in his hands, the Emmanuel worker does what the regular practitioner does not do in the class of nervous cases selected: he makes use of that wonderful and vital force of most men, the religious part of them, for the relief of the physical. We physicians mentally appeal to a patient and demand his confidence; the Emmanuel worker communes with the spiritual man and demands his faith. In psychotherapy the tie between the healer and the one who would be healed can not be made too strong and the aid can not be made too powerful.

Looking at the matter squarely, can we wonder that coadjutors whom we do not recognize have sprung up from the wrong sources to supplement our insufficiency? I think we are awaking with a start to our weaknesses. How much more potent would a movement such as that which originated in Boston be had it sprung from the bosom of the learned medical profession! How much more sensible and practical would it be for the physician to call in the spiritual adviser than for the spiritual adviser to be compelled to call in the physician—in his own domain!

It is not possible for us perhaps to be "all things to all men." Some of us consult a pathologist to make use of his technic; we send our prescriptions to the druggist to be compounded; we have a masseur on our list for the cases needing massage; why not have for the mutual benefit of all concerned a trained religious worker on our staffs to utilize the spiritual in conjunction with our established treatment. I agree with all those who truly believe that the spiritual natures of our neurasthenic and mental patients are agents too powerful to be longer disregarded.

EDWARD A. RICH, M.D.

A Pioneer in the Fight Against Quackery.

ST. LOUIS, Nov. 23, 1908.

To the Editor:—The department of Medical Education and State Boards of Registration in THE JOURNAL is one of the highest interest and importance, and, in looking over the contents I have more than once thought that the prime mover in the great undertaking for better things which this department evidences did not receive during life that full recognition at the hands of the medical profession which his achievements deserved. Nor has this acknowledgment been publicly made since his death.

I refer to the late Dr. John H. Rauch, secretary for many years of the State Board of Health of Illinois, who, in all matters pertaining to medical education in America, was a pathfinder, pioneer, waymaker—one who fought the good fight for honesty and thoroughness in medical teaching and training with such persevering firmness that the fruits are now being gathered throughout almost the entire length and breadth of this continent, and whose well-earned fame can in no wise be dimmed through the luster gained by those who may come later.

As secretary of the State Board of Health of Missouri for a period concurrent with a part of the public life of Dr. Rauch I was in sympathetic official touch and agreeable personal relations with him, and can testify to the friendly aid often extended to clear up the new and difficult questions that arose with respect to the standing of schools, dealing with advertising frauds, examination and licensing of medical applicants, and the like.

Where the body of Dr. Rauch was buried is not known to me, nor whether the spot is marked by any memorial adequately showing the vastness and value of his work to the public and the profession; but, in view of his life and labors, the question may be asked whether it is not a serious obligation resting on the organized profession of Illinois to take the lead in a movement to raise in some appropriate place a memorial in marble or bronze that shall signify to later generations his rightful place in the great struggle in which he was the chief leader, *censor medendi, pontifex medicus.*

The evidences of his worth and work should appeal to every reputable medical college now extant in the land, for in testimony of his merit may be shown the graveyards where a host of fraudulent concerns were buried through his energy, pluck and ability. Therefore such medical schools, and the various state sanitary and licensing boards should welcome the opportunity to aid in forwarding a movement to render a fit tribute to the memory of a man whose services were fundamental, beneficent, and of enduring value to the welfare of his fellowmen.

GEORGE HOMAN, M.D.

Hyperemic Treatment Not New.

SIDNEY, OHIO, Nov. 21, 1908.

To the Editor:—The advertisement of a volume entitled "Bier's Hyperemic Treatment" calls to my mind the fact that this alleged new discovery is new neither in principle nor in application. It is not, as the advertisement alleges, a therapeutic discovery of greater importance than any within recent years. In principle it is simply an amplification of the cupping-glass and adapted to a wider range of utility. I have in my possession the old air-pumps and several of the parts of an apparatus which was adapted to apply this method to every part of the human body, including the whole trunk except the head. The outfit was well made of japanned tin, glass, and pure rubber or rubber cloth, and would fit over any of the prominences of the body, as the knee, shoulder and hip. The receptacles for the body, arm and leg were made of tin. Even the fingers were provided for. By whom this apparatus was made or devised is not known, but it was supposed to be patented and was sold for several hundred dollars. It was owned by a man who had a mania for "patent rights," and at his request I made trials of its merits at intervals as opportunity offered. The results were not more satisfactory than the results of other methods of treatment.

It is well said that it is not a panacea. Like other therapeutic measures, in selected cases it has a field of usefulness. But to herald it as a new discovery of great importance is nonsense. Of course the treatment can be applied to every variety of lesion and disease, but the results usually will be disappointing. Verily there is nothing new under the sun—especially in hyperemic treatment. It was in use half a century ago.

D. R. SILVER.

Instruction in Medical Ethics.

MEMPHIS, TENN., Nov. 27, 1908.

To the Editor:—Dr. Bryant's letter concerning the teaching of medical ethics, which appears in THE JOURNAL, November 28, is more than timely. It should be a part of the curriculum of every medical school to instil these principles into the minds of their students through a series of lectures on medical ethics, for during their student days the future practitioners are in the most receptive mood for such instruction. In the school with which I am connected a course of lectures in medical ethics has been conducted for two sessions, and every graduate of the institution when he is handed his diploma receives at the same time a copy of the "Principles of Medical Ethics of the American Medical Association."

RICHMOND MCKINNEY.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

CUGUILLERE'S SERUM.

PHILADELPHIA, Nov. 7, 1908.

To the Editor:—In THE JOURNAL, Nov. 7, 1908, page 1626, Dr. Eugene Caravia advocates the use of Cuguillère's serum, which he says "consists of allylum sulphid 1 gram, tincture of myrrh 1 gram, and Hayem's glycerinated serum 100 grams. It is a yellow liquid, with a strong odor of garlic and is non-toxic." Please tell me if this is a proprietary remedy or a proper therapeutic measure to be employed by reputable physicians; also where it can be obtained, if it is as capable of beneficial influences as is indicated in the brief abstract referred to. INQUIRER.

ANSWER.—The formula given above is the one announced by Dr. Cuguillère in a short communication on his "serum" before the surgical section of the International Congress on Tuberculosis at Paris (1905; see *Transactions*, II, 11). It appears, therefore, to be no serum at all, because the "serum" component is merely Hayem's fluid or artificial serum, the formula of which is usually given as mercuric chlorid 0.5, sodium sulphate 5, sodium chlorid 1, distilled water 200, with an addition of glycerin. The two other components are the "active" ones, according to Dr. Cuguillère, who has a strong belief in the "extraordinary power of garlic and the ethereal oils containing organic sulphur." Allylum sulphid (C_3H_5)8 is the principal component of the ethereal oil of *Allium sativum*, and like the latter (garlic) has had some reputation as a remedy for tuberculosis. Regions in which much garlic is consumed, such as Galicia, are reported comparatively free from tuberculosis; and R. Koch has also experimentally demonstrated that the bacillus is little resistant against the various aromatic substances, especially the oil of garlic and the allied oil of mustard. From a report of Caravia ("Cuguillère's Serum in the Treatment of Tuberculosis," *Medical Record*, N. Y., 1908, lxxiv, 520) we learn however, that Cuguillère, who prepares and distributes his "serum" himself, holds that since the synthetic allylum sulphid is inactive, it is necessary to employ the "organic" sulphur from fresh juices of brassica, allium, watercress, horseradish, etc. Therefore the formula given can not indicate the true composition of this "serum." It is given by intramuscular injection at doses from below 5 c.c. to the "useful maximum dose of 15 c.c." There are so few reports of the use of this preparation that it is impossible to arrive at any definite conclusion regarding its value.

CALOMELOL OINTMENT.

ST. LOUIS, Nov. 16, 1908.

To the Editor:—I am in receipt of an advertising pamphlet entitled "Calomelol Ointment (Heyden)." Among other things I find therein an article "by Professor Neisser and Dr. Siebert," from which I quote (page 6): "Calomelol ointment contains 45 per cent. of Calomelol, which consists of calomel in a colloidal or soluble form. Calomelol . . . is soluble in water one part to fifty, and also in blood serum, in the secretions of the body, etc. It contains 66 per cent. of metallic mercury. In addition Calomelol ointment contains 2 per cent. of free metallic mercury." Until now I supposed that calomel (of which Calomelol "consists") was insoluble in any "form" in water, and contained very nearly 85 per cent. of mercury. Please explain the matter to me.

JOSEPH GRINDON.

ANSWER.—The ordinary insoluble calomel is formed when a solution of sodium chlorid is treated with mercurous nitrate. According to the patent specification, a water-soluble colloidal calomel is made by treating a solution of sodium chlorid in the presence of a proteid with mercurous nitrate; the product is precipitated by alcohol, collected and dissolved in water with the aid of a little alkali. This is the product sold as Calomelol. The exact constitution of this product has probably not been established, but it is generally believed to be calomel which, through the intervention of proteid in its formation, has not become insoluble. A number of similar colloidal products have been prepared. Of these the best known are the colloidal forms of metallic gold and metallic silver, the latter having been introduced in medicine. The colloidal silver and colloidal gold are supposed to be metallic silver and gold, differing from the metallic form in being water-soluble.

HYPODERMIC USE OF MERCURY IN SYPHILIS.

NEBRASKA CITY, NEB., Nov. 14, 1908.

To the Editor:—What is the best salt of mercury for hypodermic use in syphilis? In a formula containing benzoate of mercury, sodium chlorid and water, is not a chlorid of mercury formed?

F. S. MARNELL.

ANSWER.—This subject has been discussed in THE JOURNAL by W. S. Gottheil ("Ten Years' Experience in the Treatment of Syphilis by the Intramuscular Injection of Insoluble Mercurials," Aug. 3, 1907, xlix, 365); by R. Wernigk ("Twelve Years' Experience in the Treatment of Syphilis by Intravenous Injections of Mercury, Arsenic and Iodid of Sodium," Feb. 22, 1908, l, 609); and by H. G. Klotz ("Mercurial Treatment for Late Manifestations of Syphilis," this issue, under Original Articles); also in this department ("Value and Technic of Mercurial Injections," Sept. 5, 1908, li, 859). Various salts are recommended, chiefly the chlorid, salicylate, benzoate, succinimid, and the iodo-phenol-sulphonate (sozoiodolate). The benzoate is soluble in water with difficulty, but is much more soluble in the presence of sodium chlorid. The salts exist in solution chiefly in the form of ions, so that it is perhaps not correct to say that the chlorid is formed. On concentration the benzoate, as it is the less soluble, would separate from the solution first, but it is not practicable to determine the exact form in which these compounds exist in solution. The sozoiodolate also is insoluble; it is dissolved by the aid of sodium iodid (mercury sozoiodolate 1 gm., sodium iodid 3 gm., water to make 100 c.c.); and in the solution the mercury probably exists in combination with iodid.

ARSENIOUS ACID TREATMENT OF EPITHELIAL CANCER.

SCOTTSBLUFF, NEB., Nov. 17, 1908.

To the Editor—On page 1740 of THE JOURNAL, November 14, I note reference to a formula of Cerny and Truneček, of Prague, which I infer was given in THE JOURNAL at one time.

May I ask where I can obtain this formula?

A. G. EMERSON.

ANSWER—Several other correspondents ask the same question, hence we reply at some length. The original illustrated article by S. Cerny and C. Truneček, of Prague, was published in the *Semaine Medicale*, Paris, March 12, 1899, page 100. They warn that the method is indicated only when the glands show no signs of induration, but the more ulcerated the surface, they add, the more rapid the action of the arsenic, as also when the cancer cells are young. As the adult cells on the surface are thrown off in the eschar and younger cells are reached, the healing process proceeds more rapidly. The eschar drops off without hemorrhage and the raw surface that is left is treated as an ordinary wound. The characteristic eschar which forms can not be produced by the arsenic on an ordinary wound. It seems to result from the special combination of the arsenious acid with the albumin of the cancer cells. The method was referred to in THE JOURNAL, May 7, 1898, and April 8, 1899. From the last mentioned issue we quote:

"The treatment of epithelial cancer with daily applications of a mixture of arsenious acid, 1 gram; ethyl alcohol and distilled water, each 75 grams, reducing later to 50 and 40 (vide JOURNAL, XXX, p. 1116), first dehydrates the cancer-cells by the action of the alcohol. The protoplasm of the cells is then coagulated by the arsenic. The cells of the cancerous connective tissue degenerate and a serous exudation is induced, which in turn affects the cancer-cells already mummified by the arsenic. A demarcation inflammation then ensues on the sound parts, followed by the elimination of the neoplasm as a foreign body, without hemorrhage. The forms amenable to this treatment are those without indurated ganglia in which local treatment is possible. Its chief advantage over surgery is that it destroys every cancer-cell without injuring the sound tissue. An analgesic can be added to the solution if the applications are very painful; morphin may be necessary for the severe pain that occasionally follows, an hour later, especially in case of carcinoma. The writers urge the general adoption of this harmless, effective cure. Three weeks are sufficient in the early stages. Extensive lesions may require a few months."

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending November 28, 1908:

Torney, George H., col., relieved from present duties in San Francisco, Dec. 1, 1908, and directed to repair to Washington, D. C., for duty in the office of the Surgeon General.

Kennedy, J. M., maj., directed to report for assignment as commanding officer, Army General Hospital, San Francisco, Dec. 1, 1908.

Pierson, R. H., capt., granted leave of absence for ten days.

Barney, F. M., M.R.C., ordered from temporary duty at Ft. McHenry, Md., to Ft. Howard, Md., for temporary duty.

Griffin, F. C., M.R.C., ordered to accompany troops from Ft. Sheridan, Ill., to Ft. D. A. Russell, Wyoming, and return to station.

Wren, R. J., M.R.C., sick leave of absence extended one month.

Lellardy, J. C., M.R.C., order for sailing for Philippine service amended; will sail Jan. 5, 1909, instead of Dec. 5, 1908.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending November 28, 1908:

Passed Assistant Surgeon P. T. Dessez, ordered to temporary duty at the Naval Hospital, Mare Island, Cal.

Assistant Surgeon G. D. Hale, detached from the *New Hampshire* and ordered to the *Idaho*.

Assistant Surgeon F. P. W. Hough, detached from the Naval Hospital, Portsmouth, N. H., and ordered to the Naval Proving Ground, Indian Head, Md.

Assistant Surgeon F. P. W. Hough, detached from the Naval Proving Ground, Indian Head, Md., and ordered to the *New Hampshire*.

Surgeon O. D. Norton, detached from the Naval Recruiting Station, New York, and ordered to continue duty in attendance on officers and enlisted men of the Navy and Marine Corps in New York not otherwise provided with medical attendance.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Nov. 25, 1908:

Kalloch, P. C., surgeon, directed to proceed to Oak Grove, Me., for special temporary duty.

Carrington, Paul M., surgeon, on being relieved by Passed Assistant Surgeon H. S. Mathewson, directed to proceed to San Diego, Cal., and assume charge of the station.

Wertenbaker, C. P., surgeon, detailed to represent the service at the thirteenth annual meeting of the Seaboard Medical Association of Virginia and North Carolina, at Washington, N. C., Dec. 1-3, 1908.

Mathewson, Henry S., P. A. surgeon, on being relieved by Passed Assistant Surgeon C. W. Wille, directed to proceed to Fort Stanton, N. M., and assume command.

Grubbs, S. B., P. A. surgeon, directed to report at the bureau for further instructions.

Gwyn, K. P., P. A. surgeon, on being relieved by Assistant Surgeon William M. Bryan, directed to proceed to Baltimore, Md., and report to the medical officer in command for duty and assignment to quarters.

Holt, John M., P. A. surgeon, granted 1 day's leave of absence, Nov. 14, 1908.

Wille, C. W., P. A. surgeon, on being relieved by Passed Assistant Surgeon J. T. Burkhalter, directed to proceed to Cleveland, Ohio, and assume command.

Burkhalter, J. T., P. A. surgeon, on being relieved by Surgeon W. P. McIntosh, directed to proceed to Gulf Quarantine Station and assume command.

Collins, G. L., P. A. surgeon, granted 3 days' leave of absence from Nov. 17, 1908, under Paragraph 189, Service Regulations.

Bryan, William M., asst.surgeon, on expiration of present leave of absence, relieved from duty at the New Orleans Quarantine Station, and directed to proceed to the South Atlantic Quarantine and assume command.

Goldsborough, B. W., acting asst.-surgeon, granted 6 days' leave of absence from Nov. 28, 1908, under Paragraph 210, Service Regulations.

Gusteter, A. L., acting asst.-surgeon, leave of absence for 10 days from Nov. 15, 1906, granted Nov. 9, 1908, amended to read from Nov. 16, 1908.

Hill, Eugene W., acting asst.-surgeon, granted 4 days' leave of absence from Nov. 24, 1908, under Paragraph 210, Service Regulations.

Light, S. D. W., acting asst.-surgeon, granted 22 days' leave of absence from Nov. 17, 1908.

Minthorn, Henry J., acting asst.-surgeon, granted 7 days' leave of absence from Nov. 23, 1908, under Paragraph 210, Service Regulations.

Tappan, J. W., acting asst.-surgeon, directed to make inspections at Del Rio and Hidalgo, Texas, Nov. 17, 1908.

APPOINTMENT.

Dr. Carlisle P. Knight appointed an acting assistant surgeon for duty at Kobe, Japan, Nov. 21, 1908.

BOARD CONVENED.

Board of medical officers convened to meet at the Marine-Hospital in Baltimore, Md., Nov. 25, 1908, for the purpose of conducting physical examinations of the members of the graduating class of cadets of the Revenue-Cutter Service: Passed Assistant Surgeon W. C. Billings, chairman; Assistant-Surgeon A. J. Warner, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Nov. 27, 1908:

SMALLPOX—UNITED STATES.

California: Oct. 31-Nov. 7, Los Angeles, 1 case; San Francisco, 2 cases.
Indiana: Oct. 31-Nov. 7, Elkhart, 3 cases; Fort Wayne, 1 case; LaFayette, Nov. 2-16, 3 cases.
Kansas: Oct. 31-Nov. 7, Topeka, 2 cases; Wichita, 1 case.
Kentucky: Nov. 7-14, Covington, 4 cases; Lexington, 1 case.
Ohio: Cincinnati, Nov. 5-12, 5 cases.
Washington: Spokane, Oct. 31-Nov. 7, 1 case.
Wisconsin: La Crosse, Oct. 31-Nov. 16, 5 cases.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, Sept. 27-Oct. 18, 1,420 cases, 652 deaths; Santos, Sept. 13-Oct. 14, 36 cases, 15 deaths.
Canada: Oct. 31-Nov. 7, Halifax, 1 case; Victoria, 1 case.
Egypt: Cairo, Oct. 7-21, 4 cases, 2 deaths.
India: Bombay, Oct. 13-20, 6 deaths; Rangoon, Oct. 3-10, 1 death.
Indo-China: Cholen, Sept. 25-Oct. 3, 1 death.
Italy: General, Oct. 25-Nov. 1, 39 cases; Naples, Oct. 25-Nov. 1, 8 cases, 1 death.
Mexico: Mexico City, Sept. 19-Oct. 3, 9 deaths.
Norway: Christiania, Oct. 10-24, 6 cases, 1 death.
Russia: St. Petersburg, Oct. 10-17, 4 cases, 1 death; Warsaw, Sept. 25-Oct. 10, 9 cases.
Spain: Barcelona, Oct. 25-31, 4 deaths; Valencia, Oct. 24-31, 2 cases.
Turkey: Constantinople, Oct. 18-Nov. 3, 7 deaths.

CHOLERA.

China: Hongkong, Sept. 19-26, 1 case, 1 death.
India: Madras, Oct. 3-16, 29 cases, 19 deaths; Rangoon, Oct. 3-10, 1 death.
Indo-China: Sept. 27-Oct. 3, Cholen, 2 cases, 2 deaths; Saigon, 1 case, 1 death.
Russia: Odessa, Sept. 19-26, 4 deaths; St. Petersburg, Nov. 4-9, 258 cases, 29 deaths.
Straits Settlements: Singapore, Sept. 19-Oct. 3, 2 deaths.

PLAGUE.

Brazil: Rio de Janeiro, Sept. 29-Oct. 18, 16 cases, 7 deaths.
Chile: Iquique, Oct. 12, 4 cases.
China: Hongkong, Sept. 19-26, 1 case, 1 death.
Egypt: General, Oct. 14-Nov. 3, 20 cases, 12 deaths; Alexandria, Oct. 14-Nov. 3, 6 cases, 4 deaths.
India: General, Sept. 26-Oct. 10, 4,977 cases, 3,699 deaths; Bombay, Oct. 13-20, 16 deaths; Rangoon, Oct. 3-10, 3 deaths.
Indo-China: Sept. 26-Oct. 3, Cholen, 9 cases, 9 deaths; Saigon, 8 cases, 7 deaths.
Peru: General, Oct. 814, 27 cases, 13 deaths; Callao, 2 cases, 2 deaths; Lima, 2 cases, 1 death.

Marriages

BENJAMIN F. ROLLER, M.D., to Miss Tracy Helen Aylwin, both of Seattle, June 5.

GEORGE E. PFAHLER, M.D., to Miss Frances Simpson, both of Philadelphia, November 21.

FREDERIC DINKLER, M.D., to Miss Rufus Cochran, both of Fort Cobb, Okla., November 10.

NORMAN O. NELSON, M.D., Madison, Wis., to Miss Edith Smith, of Baltimore, November 21.

JOSEPH CONN, M.D., New Orleans, to Miss Hortense Holzman of Shreveport, La., November 2.

GEORGE O. A. KELLOGG, M.D., Nampa, Idaho, to Miss Effie Cowley, of Boise, Idaho, November 11.

W. WADE DOSTER, M.D., St. Johns, Kan., to Miss Helena Wilson of Philadelphia, November 11.

J. GILL ALLAN, M.D., to Miss Blanche Claypoole, both of Edgewood, Ill., at St. Louis, October 28.

SAMUEL F. HASSLER, M.D., to Miss Mae Reed, both of Harrisburg, Pa., at Baltimore, September 30.

ANTHONY F. DOUGHERTY, M.D., Ashley, Pa., to Miss Teresa L. Murphy, of Plains, Pa., November 10.

JON THEOPHILUS EDWARDS, M.D., New Haven, Pa., to Miss Lizzie Collins, of Pittsburg, November 16.

JAMES S. BATES, M.D., Erwin, S. D., to Miss Blanche Ethel Peirson, of Gascoyne, N. D., November 5.

NEAL EDWARDS SELLERS, M.D., Mobile, Ala., to Miss Nell Brown, of Birmingham, Ala., November 10.

FRANK U. SWING, M.D., Avondale, Cincinnati, to Miss Louise Hocker, of Cincinnati, November 24.

J. ELMER PORTER, M.D., Pottstown, Pa., to Miss Annella Newborn, of Royersford, Pa., November 18.

GEORGE LEE FOSQUE, M.D., Onancock, Va., to Miss Mary N. Fitchett, of Cape Charles, Va., November 18.

G. EDWARD CAMPBELL, M.D., Hampton, Tenn., to Miss Mary Sue Hurt, at Washington, D. C., November 5.

PERLEY RAYMOND BRENTON, M.D., Mineral, Wash., to Miss Ruth Ella Greathouse, of Seattle, November 12.

A. E. GOLDSMITH, M.D., Columbia City, Wash., to Miss Florence A. Sheppard, of Chicago, September 1.

WILLIAM STERLING ROBERTSON, M.D., to Miss Ellen Booker Roller, both of Charleston, W. Va., November 19.

LOWICK THOMAS PATILLO, M.D., Atlanta, to Miss Leola Ottila LeRosen of Shreveport, La., November 24.

GEORGE M. BELHEMEUR, M.D., Negaunee, Mich., to Miss Louise C. Werner of Lake Linden, Mich., November 9.

JACOB SIEFERTH, M.D., Hazelhurst, Wis., to Mrs. Marion Van Dyke Ramsey, of Grand Rapids, Wis., November 18.

JOHN C. O'CONNOR, M.D., Manchester, N. H., to Miss Helen Jackson Raymond, of Salem, Mass., at Marblehead, Mass., November 17.

Deaths

John C. Hupp, M.D. Jefferson Medical College, Philadelphia, 1847; in 1859 secretary of the Section on Practice of Medicine and Obstetrics of the American Medical Association, and chairman of the Committee on Necrology; for ten years treasurer of the West Virginia State Medical Association; and for a like period treasurer of the Medical Society of the City of Wheeling; for several years state vice-president of the Jefferson Medical College Alumni Association; city physician and secretary of the Wheeling board of health in 1864; physician to the Children's Home in 1873; state vaccine agent from 1863 to 1878; consulting physician to the city hospital; president of the Ohio County board of supervisors from 1863 to 1866; a member of the district board of education from 1873 to 1879; and for many years president of the local board of U. S. pension examining surgeons; died at his home in Wheeling, November 18, from senile debility, aged 88.

Frank Lemuel Adams, M.D. Cooper Medical College, San Francisco, 1883; a member of the American Medical Association; treasurer of the Pacific Association of Railway Surgeons; formerly president of the Medical Society of the State of California and the Alameda County Medical Association; one of the founders, president and professor of clinical surgery in the Oakland College of Medicine and Surgery; president of the Oakland Board of Health; surgeon to the Santa Fe system and the Oakland Traction Consolidated Company; died suddenly at the home of his cousin in Oakland, from angina pectoris, November 20, aged 50. The Oakland Chamber of Commerce, at a special meeting, held November 21, passed resolutions laudatory of Dr. Adams, expressive of the loss sustained by the city in his death, and directing that a memorial tablet be placed in the directors' room of the Chamber of Commerce.

George R. Graham, M.D. University of Maryland, Baltimore, 1883; of Baltimore; a member of the Medical and Chirurgical Faculty of Maryland; a veteran of the Civil War; a member of the board of U. S. pension examining surgeons of Baltimore since 1889; department commander of the G. A. R. in 1890; and surgeon general in 1892; past president of the Grand Army Club of Maryland; died in the Maryland General Hospital, November 19, from pneumonia, aged 64.

Casper Coiner Henkel, M.D. University of Pennsylvania, Philadelphia, 1857; a member and twice vice-president of the Medical Society of Virginia; surgeon of the Thirty-seventh Virginia Infantry and later brigade surgeon, division surgeon and corps surgeon in the Confederate service throughout the Civil War; died at his home in New Market, Va., November 16, from diabetes, aged 73.

Charles Cunningham Schley, M.D. University of Georgia, Augusta, 1857; University of Paris, France, 1860; surgeon of the Seventh Georgia Battalion and later division surgeon in the Confederate service throughout the Civil War; one of the heroes of the yellow-fever epidemic of 1876 in Savannah; died at his home in that city, November 19, from cerebral hemorrhage, aged 72.

Charles Dexter Noble, M.D. University of Louisville, 1868; a veteran of the Civil War; surgeon of the Fifth Ohio Infantry, U. S. V., in the Spanish-American War, and for two years thereafter an acting assistant surgeon in the Army; and during nearly all that time on duty in the Philippine Islands; died at his home in Oberlin, Ohio, November 16, aged 65.

Samuel Dauphin Culbertson, M.D. Jefferson Medical College, Philadelphia, 1866; a member of the American Medical Association; a veteran of the Civil War; a member of the house of delegates of the Illinois State Medical Society and the oldest practitioner of Ford County; died at his home in Piper City, November 12, from pneumonia, aged 69.

George W. Perkins, M.D. Harvard Medical School, Boston, 1886 division surgeon of the Union and Southern Pacific Railway at Ogden, Utah; and visiting surgeon to the Union Pacific Railway Hospital; one of the founders, and a member of the staff of the Ogden General Hospital; died in that institution, November 18, from intestinal paralysis, aged 58.

William J. Martin, M.D. Hahnemann Medical College, Philadelphia, 1877; a veteran of the Civil War; a member of the staff of the Pittsburg Homeopathic Hospital for twenty-five years, and president of its medical board; died suddeny at his home, November 17, from cerebral hemorrhage, aged 60.

Samuel John House, M.D. Vanderbilt University, Nashville, 1876; a member of the Tennessee State Medical Association and a member of the board of aldermen of Franklin Tenn.; died at his home November 16, a week after an accident in which he was struck by a train at Mallory Station.

Rufus Revill Applewhite, M.D. New Orleans School of Medicine, 1860; a Confederate veteran; from 1877 to 1887 a member of the Mississippi legislature from Lincoln County; and in 1899 sheriff of that county; died at his home in Brookhaven, November 21, from paralysis, aged 70.

Edward Irving Ford, M.D. College of Physicians and Surgeons, New York City, 1860; surgeon of volunteers during the Civil War; and in charge of the Army General Hospital at Nashville; died at his home in Binghamton, N. Y., November 16, from heart disease, aged 84.

Frederick Arthur Van Buren, M.D. Northwestern University Medical School, 1904; of Lead, S. D.; a member of the American Medical Association; formerly assistant surgeon to the Homestake Mining Company; is said to have been murdered recently in Colorado, aged 32.

Benjamin M. Atkinson, M.D. Jefferson Medical College, Philadelphia, 1852; a member of the Medical Society of Virginia; for many years physician to the Virginia School for the Deaf and Blind, Staunton; died at his home in that city, November 18, aged 78.

William D. Scott, M.D. Medical College of Ohio, Cincinnati, 1896; a member of the American Medical Association; for many years health officer of Georgetown, Ky.; died at the Good Samaritan Hospital, Cincinnati, November 18, from heart disease, aged 39.

Hugh Morison Ives, M.D. New York University, New York city, 1870; major and surgeon during the Civil War; died at his home in Parksville, N. Y., November 19, from paralysis, due to injuries sustained in a fall down a precipice, four years before, aged 69.

James Edward Tompkins, M.D. University of Maryland, Baltimore, 1891; of Fredericksburg, Va.; a member of the American Medical Association; died in Johns Hopkins Hospital, Baltimore, November 18, a few hours after a surgical operation, aged 41.

Benjamin A. Ver Nooy, M.D. Bellevue Hospital Medical College, New York City, 1896; of Pulteney, N. Y.; died in a hotel in Penn Yan, N. Y., November 18, from the effects of a gunshot wound, said to have been self-inflicted while despondent, aged 35.

Orin S. Mills, M.D. Medical College of Ohio, Cincinnati, 1888; house physician to the Columbus (Ohio) State Hospital for the Insane; died in Gallipolis, Ohio, November 24, from a gunshot wound of the head, said to have been self-inflicted, aged 48.

Joseph Alston James, M.D. Medical College of the State of South Carolina, Charleston, 1852; chief surgeon of Kershaw's division, in the Confederate service, during the Civil War; died at his home in Columbia, S. C., November 23, aged 79.

Robert Edward Smith, M.D. Medical College of Alabama, Mobile, 1882; a member of the Medical Association of the State of Alabama; died suddenly at his home in Greenville, November 16, from heart disease.

William L. Fleming, M.D. New York Homeopathic Medical College, 1873; of New York City; a veteran of the Civil War; died in Lincoln Hospital, New York City, November 20, from meningitis, aged 73.

Englebert Frenz, M.D. University of Giessen, Germany; of Saginaw, Mich.; for several terms a member of the board of education; died in St. Mary's Hospital, Saginaw, November 7, from diabetes, aged 68.

Francis Patrick Lewis Cantlie, M.D. McGill University, Montreal, 1902; died at the home of his parents in Montreal, November 10, from the results of a spinal injury received several years before, aged 29.

George W. Norris, M.D. University of Maryland, Baltimore, 1872; while suffering from nephritis, and temporarily insane, shot and killed himself at his home in Baltimore, November 20, aged 62.

Armand Mignault, M.D. University of Victoria College, Cobourg, Ont., 1886; a member of the Massachusetts Medical Society; died at his home in Salem, November 13, from cancer, aged 64.

John H. Purefoy, M.D. Jefferson Medical College, Philadelphia, 1859; for several years postmaster of Furman, Ala.; died

at his home in that place, November 22, from cerebral hemorrhage, aged 72.

Boyle Ludwell Ellett, M.D. Missouri Medical College, St. Louis, 1861; a Confederate veteran; postmaster of St. Clair, Mo., for eleven years; died at his home in St. Clair, October 31, aged 69.

Joseph Shreve, M.D. Philadelphia University of Medicine and Surgery, 1866; Hahnemann Medical College, Philadelphia; died at his home in Burlington, N. J., November 19, aged 86.

George W. Todd, M.D. University of Tennessee, Nashville, 1900; health officer of Rutherford County, Tenn.; died from fever at his home in Rucker, November 20, aged 31.

Leona Lebus, M.D. Johns Hopkins Medical School, Baltimore, 1900; of Los Angeles, Cal.; died in a hospital in San Francisco, after a surgical operation, November 20.

David W. McClure, M.D. Medical College of Ohio, Cincinnati, 1885; of Cincinnati; died, November 1, from skull fracture due to a fall in an epileptic seizure, aged 49.

John Newton Poage, M.D. Medical College of Ohio, Cinnati, 1848; died at his home in College Hill, Cincinnati, October 29, from valvular heart disease, aged 83.

William A. Rathff, M.D. Tulane University, New Orleans, 1886; of Edwards, Miss.; died at the infirmary, Vicksburg, Miss., November 16, from nephritis, aged 45.

John C. Connell, M.D. University of Nashville, 1880; formerly of Goodlettsville, Tenn.; died at his home in Nashville, November 22, from heart disease, aged 52.

Walter Marsh Jackson, M.D. Harvard Medical School, Boston, 1868; of Stamford, Conn.; died suddenly from heart disease in that city November 15, aged 66.

John S. Van Marter, M.D. Philadelphia College of Medicine and Surgery, 1886; died at his home in New Brunswick, N. J., November 20, aged 71.

Lewis S. Blackwell, M.D. University of Pennsylvania, Philadelphia, 1857; died at his home in Perth Amboy, N. J., November 18, aged 75.

Christian William Davis, M.D. Jefferson Medical College, Philadelphia, 1890; died at his home in Philadelphia, November 14, aged 45.

Joseph Sills Campbell, M.D. Queen's University, Kingston, Ontario, 1890; died at his home in Rochester, N. Y., November 6, aged 38.

George W. Horn, M.D. Bennett Medical College, Chicago, 1873; died at his home in Sharon, Wis., November 20, aged 70.

Society Proceedings

COMING MEETINGS.

Southern Surgical and Gynec. Assn., St. Louis, Dec. 15-17.
Western Surgical and Gynec. Assn., Minneapolis, Dec. 29-30.
American Assn. of Anatomists, Baltimore, Dec. 29-31.

SOUTHERN MEDICAL ASSOCIATION.

Second Annual Meeting, held at Atlanta, Ga., Nov. 10-12, 1908.

(*Continued from page 1893.*)

Diagnosis and Pathology of Malaria.

DR. WILLIAM KRAUSS, Memphis, Tenn.: The majority of physicians rarely resort to blood examination in diagnosis of malaria. The symptoms and the quinin test are not to be omitted entirely, but they are often very unreliable. Even though there exist no doubt as to the case being one of malarial fever, and even though the physicians can tell from the symptoms with which clinical type and which stage of the cycle he is dealing, the examination of the blood enables him to predict events concerning which he would be absolutely in the dark without it. A numerical idea can be obtained of the infection, developing secondary groups, multiple species, resting bodies, latent infection, and effects on the blood can be detected, sometimes, indeed, it is possible to recognize the presence of another disease. It is important to recognize species, and since each of the three can give quotidian, tertian, remittent, continued and pernicious fever, latent infection and cachexia, no other method is open except examination of the blood. The differential leucocyte count is of diagnostic importance, and I am in the habit of showing it by three columns of 100 units each, the first representing the lymphocytes, the second the large mononuclears, and the third the polymorphonuclears.

Treatment of Malaria.

DR. J. A. WITHERSPOON, Nashville, Tenn.: The treatment of malaria is divided into hygienic and medicinal. The room should be light, well ventilated and thoroughly screened. The patient should be in bed, and have a daily warm bath. The diet should be nutritious, the bowels should be kept regular, and large amounts of water should be taken. Quinin is the specific, and it may be given by mouth, by rectum, hypodermically, or intravenously. Internally the sulphate is best, hypodermically the hydrochlorid. In the intermittent forms 15 or 20 grains should be given from four to six hours before the chill is expected. The patients should be kept on small doses of quinin for at least two months, and on the seventh, fourteenth and twenty-first days the initial dose should be repeated. In the estivoautumnal variety calomel should be given in broken doses preceding the quinin, which is preferably given in acid solution. From 15 to 30 grains of quinin should be given in this way, in divided doses, during the twenty-four hours. Treatment should be continued from six to ten weeks after the attack. If anemia is marked, iron and arsenic should be given. In the pernicious types quinin should be given hypodermically or intravenously, from 10 to 15 grains of the hydrochlorid or the bisulphate every three hours until a dram is in the system at least four hours before the time for the chill to return. In malarial cachexia arsenic and quinin should be administered over a prolonged period. I am convinced that in all cases of this type a change of residence is necessary. When quinin could not be used I have obtained the best results with the tincture of eucalyptus. In certain cases splenectomy has been fairly successful.

Discussion on Malaria.

DR. H. M. FOLKES, Biloxi, Miss.: In my work I find practically only two methods of satisfactory administration of quinin—intravenously and in solution by mouth. In hospital work I give it altogether by the latter method.

DR. D. HARVEY DILLON, New Orleans: The dose of quinin in pernicious malaria is the amount required to produce its full physiologic action, and it is important that we should be able to tell when we have cinchonized the patient. In this form of malaria it is best administered hypodermically.

DR. D. L. WILKINSON, Montevallo, Ala.: In the estivo autumnal type for some years I have used a combination of quinin, gelsemin, elixir of vitriol and capsicum, which seems to be almost specific when borne by the stomach. In the treatment of enlarged spleens and indurated livers in the chronic forms I have had very happy results by the use of the iodid of potassium and the muriate of ammonia.

DR. C. S. BEL, New Orleans: I recall a female patient who died of pernicious malarial fever, and the plasmodium, besides being found in the blood, pericardium, meninges, and spleen, was also present in a seven months' fetus.

DR. J. H. WHITE, New Orleans: I think that not enough stress has been laid on the isolation of the individual patient. Some years ago I had charge of a hospital, thinking it was properly screened, but I found that one of my chronic patients who had not been out of the ward for a year contracted an estivoautumnal attack of malaria in the ward.

DR. WILLIAM LITTERER, Nashville, Tenn.: I have found Dr. Krauss's method of showing the leucocyte count of distinct aid, although not uniformly correct. There are certain conditions in which the transition is so close that it is impossible to tell from the leucocyte count whether we are dealing with malaria or some other condition.

DR. VICTOR G. HEISER, U. S. Public Health and Marine-Hospital Service: Does Dr. Witherspoon know of any patient with malarial fever, microscopically diagnosed, that recovered without any treatment whatsoever?

DR. W. KRAUSS: In using quinin hypodermically, the solution should be dilute, a large syringe should be used, and the needle should be plunged in as far as possible.

DR. J. A. WITHERSPOON: I am glad Dr. White mentioned the screening of the patient, because that is something which is sadly neglected in private practice. I have had patients go to the mountains and remain without treatment and recover. I do not agree with Dr. Thayer as to the hypodermic method. I have seen cinchonism produced by it repeatedly. The solution used should be very dilute, and the injection should be made in the lumbar region or the buttocks, with a large syringe. The intravenous method is all right theoretically, but very few physicians will use it in practice. Screen the patient, kill the mosquito wherever you can, and see that the quinin is properly absorbed; that is often overlooked. Give it a little too long rather than too short a time.

Anorexia.

DR. GEORGE M. NILES, Atlanta: The cases I wish to deal with are those more pronounced cases of anorexia which are so perplexing in their management. It is not always easy to remove the cause. Lack of appetite associated with the wasting or suppurating diseases should be combated energetically. Nourishment should be administered often and in concentrated form. When anorexia is accompanied by foul taste and bad breath, a test meal should be ordered, and lavage used if indicated. When some mental condition is the cause it is important to employ every means of suggestion at our command. In some cases of anorexia rectal feeding may have to be employed to bridge over a crisis. Much aid may be obtained from drugs judiciously administered, as hydrochloric acid, pepsin, nux vomica, or the bitter stomachics. I believe that when we can consider the stomach as only one part of the alimentary tract, but reflexly in sympathy with every other organ in the body; when we can realize that, while stomach troubles affect the disposition, moody tempers also produce marked functional disorders of the stomach, and when we can add to medicinal and hygienic measures a well-considered force of psychic influence, we shall be able to control and cure 95 per cent. of these patients.

Serum Diagnosis of Syphilis.

DR. WILLIAM LITTERER, Nashville, Tenn.: I examined 72 patients in whom syphilis could be reasonably excluded. All gave negative reaction. In 3 patients with tabes 1 was positive and 2 negative. In 6 latent cases the patients contracted syphilis from 10 to 15 years ago, and received the classical treatment. Two of these gave a positive reaction, the others were negative. The patient with primary syphilis (chancre showing *Spirocheta pallida*) gave positive reactions. Vigorous antisyphilitic treatment was at once instituted. In one week after treatment those with positive reactions gave no apparent evidence of attenuation. One month later the reactions in these 2 patients had nearly disappeared. Four patients with chancroid and 2 with gonorrhea gave negative reactions. In 7 patients examined before the appearance of secondary symptoms (in 3 the spirochete was found) 6 were positive and 1 doubtful. This reaction of Wassermann is specific. It is found in more than 85 per cent. of all patients with syphilitic manifestations. Diagnosis can be cleared up in those unfortunate individuals who go through years of their lives never knowing whether they have or have not contracted this dread disease. By such a method of diagnosis the great sociologic questions concerning the marriage of syphilitic patients, the detection of syphilis in wet nurses, etc., is of incalculable value. Lastly, it is of inestimable merit in the differential diagnosis in every department of medicine.

DISCUSSION.

DR. WILLIAM J. BUTLER, Chicago: An enormous number of presumably non-syphilitic patients suffering from various infections, and also others apparently healthy, have been examined with a view to determining whether this reaction would be found under any other circumstances than where the patient had syphilis, and almost uniformly they have proved negative. The few instances in which they have proved positive would well come under these probable luetic cases among the great number of non-syphilitic cases. This would seem to prove for clinical and practical purposes the specificity of the test. In manifest syphilis, that is, patients with skin manifestations, lesions of the mucous membranes, etc., positive results will be obtained from 95 to 98 per cent. of cases. It is remarkable how early this test will appear in syphilis. I have had ten patients examined before the appearance of secondaries, and in all the reaction was positive. This will be of some value to syphilographers when they are uncertain as to whether what appears as a soft chancre is accompanied by a hard chancre. In two such cases the test proved positive, and the patients subsequently developed secondary manifestations. In internal medicine, neurology, pediatrics, surgery, etc., I believe that this test becomes an exceedingly valuable aid to us. In the so-called latent cases of syphilis about 50 to 60 per cent. will give a positive reaction. It is presumed that this 50 per cent.of positive reactions would coincide well with the 50 per cent. of patients with syphilis which would show old visceral lesions of syphilis at postmortem. It is assumed on this basis that the test, when positive in every case, indicates activity of the syphilis, whether invading some internal structure or affecting the nervous system. As to parasyphilitics: in paresis from 90 to 100 per cent. will give a positive reaction. Such a high proportion, however, is not found in tabes, about 60 per cent. being positive. Patients under treatment with mercury and the iodids sufficiently long will not give a positive reaction, and it is assumed, from this and from the fact that the vast majority of patients with symptoms give the test that a positive reaction is a definite indication for treatment, irrespective of what the examination of the patient shows. Something can be told as to prognosis, but no clinician will rely absolutely on this or any other test in regulating his treatment, and will naturally resort to periodic treatment without the reaction, but the reaction is an invaluable aid in the control of treatment.

DR. WILLIAM KRAUSS, Memphis, Tenn.: If it were not for the extreme importance of a disease like syphilis so complicated a test would fall of its own weight, and probably it will do so anyway. All of these specific reactions against infections are more of an evidence that the individual is making a fight against the infection than they are evidence of the disease itself.

DR. W. LITTERER, in closing: In all probability this test will not be employed except in large medical centers, although I do not consider it so difficult as estimating the opsonic index. I believe that the reaction will be simplified. Dr. Varrey, of Detroit, has used a modification of Klausmann's method by taking 1 c.c. of blood serum from a suspected patient and mixing with that a few drops of a 1 per cent. solution of taurin. This is set aside and a precipitate indicates a positive reaction. He has experimented with 205 cases, and found it positive in 94 or 95 per cent. He has never obtained a positive reaction from a patient who was not suffering from syphilis.

Practical Results in Philippines in Reducing Mortality by Elimination of Intestinal Parasites, Especially the Hookworm.

DR. VICTOR H. HEISER, Public Health and Marine-Hospital Service: In Bilibid prison over 3,000 prisoners are constantly confined. From 1902 to 1905 there was an uninterrupted increase in the death rate until a mortality of over 200 per thousand per annum was reached. The sanitation of the prison was then transferred from the control of laymen to the Bureau of Health. Work which had for its object the relief of this condition was begun at once, overcrowding was relieved, sewage disposal improved, adjacent lowlands filled in, the sick placed under treatment more promptly, and other well-recognized measures were put into effect. The death rate in a few months' time fell to about 75 per thousand per annum, but further reduction seemed impossible. For a period of about six months every effort was made to lower it, but without success. A study of the hospital patients showed that they were dying with ailments to which they should not have succumbed. Their powers of resistance were evidently impaired. The habits of the natives of the Philippines suggested a remedy. The evidence pointed to some extraordinary drain on the system. There was plenty of food, but evidently

imperfect nourishment. With a view to discovering the cause, a routine practice of microscopically examining the feces of every prisoner was inaugurated; 84 per cent. were found infected with intestinal parasites. Of these, 60 per cent., or 52 per cent. of the total number of prisoners, had hookworms, 59 per cent. had whipworms, 23 per cent. had amebas, and 21 per cent. harbored some other species of parasite. Over half of the prisoners were hosts for at least two kinds of worms. Active therapeutic measures were taken to rid the prisoners of the causes of these debilitating troubles, and the death rate fell to less than 20 per thousand. Some thousands of stool examinations made in the Philippines outside of Bilibid show that about the same percentage of infections may be expected among the general population. It is believed that the foregoing facts warrant the assertion that in countries where hookworm disease is prevalent its eradication will produce better results in diminishing the mortality than any one other public health measure which has yet been advocated.

DISCUSSION.

DR. MARTIN CROOK, Columbus, Ga.: In my work as county physician for the past three years I have come in contact with this disease more than any other in the class of people which it affects. It strikes me that when we have a disease that affects sometimes every member of a family, making them unable to work, except possibly one or two days a week, there is no method of computing its economic importance in the Southern States. I have not found it yet in the colored race, although I do not mean by that that they are entirely immune.

DR. W. F. WESTMORELAND, Atlanta, Ga.: My experience with surgical cases has been that with some degree of frequency uncinariasis is a prominent factor in contributing to the surgical conditions. I am sure that in an appreciable percentage of cases the recognition of this fact and the examination of the feces will lead to a clearing up of symptoms which were unjustifiably attributed to the surgical condition or to an operation, and put these patients on the road to early convalescence.

DR. WILLIAM LITTERER, Nashville, Tenn.: Several cases of uncinariasis have been reported from Nashville, and I have seen two cases in people who had never left Davidson county. In these cases the condition was first recognized by finding a marked eosinophilia.

DR. WILLIAM KRAUSS, Memphis, Tenn.: The physician who expects to make a diagnosis from eosinophilia is apt to go wrong. In malaria the spleen may or may not be enlarged, and in uncinariasis it is always contracted. But the only sure diagnostic point is a microscopic examination of the stools.

DR. V. C. HEISER: I hope the Southern Medical Association will give all the influence which it undoubtedly has in the South to assist Dr. C. W. Stiles, of Washington, D. C., in the hookworm campaign which he is about to undertake.

Influence of Education on the Development of Women.

DR. D. L. WILKINSON, Montevallo, Ala.: For eleven years I have been studying the educational problem from the standpoint of its immediate and remote effects on the development of women. During these years I have been physician for more than 4,400 college women between the ages of 14 and 21. While I am by no means convinced that all investigators are correct in their observations and deductions, I am of the opinion that many are right in attacking present educational methods as pernicious to well-rounded physical development, the highest mental attainment and stable nervous equilibrium. That it also predisposes to pulmonary disease and gynecologic troubles, there can be no doubt. Further, it adds its quota to victims of ocular disease. In the school of which I have charge there has been a college physician since its beginning, and every provision has been made for the care of the sick, but we have had many patients who probably could attribute their ill health to their college days, in spite of all our care. If this be true in a college under the daily supervision of a physician, what must be the condition in a college without any supervision?

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, held Nov. 19, 1908.

The President, DR. JOHN A. WYETH, in the Chair.

Medical Service in a Modern Army in War, as Exemplified by the Japanese Army in the Russo-Japanese War.

MAJOR CHARLES LYNCH, M.D., U. S. Army, delivered this anniversary discourse:

During the Russo-Japanese War I served as military attaché to the legation in Tokio. My service comprised the last ten months of the war, nearly all of which time was spent at the front in Manchuria with the Second Japanese Army.

The reasons that enabled the Japanese to accomplish such noteworthy results may be considered under three heads—organization and administration, sanitation, and professional care of ill and wounded. Any medical department, in order to be efficient, must be sufficient in numbers to perform the work required of it. The Japanese were liberal in providing medical personnel; they found that they required 1 per cent. of medical officers and 9 per cent. of inferior medical personnel to the total fighting force. They recognized that quality was as important as quantity and offered inducements in pay and promotion sufficient to secure good men. The Japanese medical department had complete autonomy, while the Russian had not. The aid given the wounded consisted of regimental aid on the firing line, then at the temporary dressing station, then the dressing station, the field hospital, the transport department for patients, the stationary hospital, the line of communication hospitals, hospital ships, the receiving hospital at home, hospital trains, rest stations, reserve hospitals and convalescent camps. This was the Japanese organization.

At the battle of Mukden, the greatest on record, there being about 310,000 men engaged on either side, the Japanese losses were reported to be about 45,000 killed and wounded. Despite the fact that the battle lasted from March 26 until April 10, and despite the heavy fire of the Russians and the disadvantages of the weather, there were practically no wounded on the Japanese side who were not under shelter within twelve hours, and almost all were cared for in a much shorter time. Japan always provided adequate, though sometimes rough, means for the care of ill and wounded, while Russia provided comfortably at some points and at others left ill and wounded without food or attendance. Japan operated 20 hospital ships, and these were frequently loaded in two days at Dalny and started for Japan. Hiroshima was the principal hospital center in Japan and provided for about 70,000 patients and for 10,000 convalescents in the convalescent camp. These men had every comfort and care which their country could supply. In all previous wars, except the Franco-Prussian on the German side, the death rate from disease was greater than that from wounds. In the field army the Japanese reported 100 deaths from wounds to every 47 deaths from disease. While Russian statistics are worthless on this point, Russia's loss from disease was probably twice that of Japan.

Though the Japanese were generally successful in preventing diseases of known causation or methods of spread, they failed with beriberi. A soldier who returned home to Japan suffering from a preventable disease was made to feel by his family and friends that he was no credit to them or to his country. A commander in the Japanese army whose troops suffered to an unwarranted extent from disease was likely to be called on for an explanation. Personal hygiene was taught in all the schools of the line officers, even in the staff college, the highest officers' postgraduate school in Japan. The soldiers received their instruction from the medical officers of their regiments. Sanitary inspections were made by medical officers of all grades, and consequently sanitary faults could not escape detection and were promptly rectified before serious damage could result. The troops were examined monthly, the unfit weeded out, and communicable diseases promptly dealt with.

The Japanese provided well for the food supply of the army. The standard allowance of food daily was 2,580

calories. The prevalence of beriberi led to the substitution of one-third barley for that amount of rice during the winter of 1904, but so far as had been observed this had no effect on the disease. Practically all the water used by the Japanese was sterilized by one method or another; it was boiled whenever possible.

The habits of the Japanese soldier were good; drunkenness was almost unknown, and successful efforts were made to prevent the soldiers from cohabiting with the Chinese women, among whom venereal disease was common, by appealing to their love for their families and their country. Even in the field the soldiers seldom failed to take a daily hot bath. The Japanese recognized the possibility of infection from flies. As they could not prevent the flies from having access to fecal matter, they served food only immediately before it was to be eaten and covered their dishes immediately after washing them. For the prevention of diarrheal diseases an intestinal antiseptic was issued to the soldiers; this was a creosote pill and was given out in little tin boxes on which was written: "To defeat the Russians, take one pill three times daily." It is believed that this was an error, however. The Japanese might be said to have had one case of typhoid and dysentery to the Russians' six. Typhus, though prevalent in Manchuria, was rare in the army. Tuberculosis was uncommon, smallpox rare and other infectious diseases occurred only in isolated cases. The increase of beriberi during the war might be ascribed to the overcrowding of the barracks and other quarters which gave opportunity for the spread of the disease from man to man. The success attained was due to the practical application of recognized rules of sanitation.

The Japanese, successful as they are as organizers, administrators and sanitarians, can teach Americans nothing in the practice of medicine and surgery. They returned a large percentage of sick and wounded men to the ranks, however. The packet for first aid was too small, badly folded and easily contaminated in handling; later an improvement was made in this respect. The strength of an army is not measured by the number of men on its rolls, but by the number on the firing line. Unless the medical department of an army is so organized and administered the combatants on the firing line are given prompt attention, this line will soon melt away by unhurt men leaving to help their wounded comrades. Both in peace and in war the medical department of an army should guard against unjustifiable loss. The bad organization and administration of the medical department of the Russian army was undoubtedly one of the factors that contributed to its defeat.

If America wishes to profit by the experience of the Japanese we should recognize that we must have a strong framework of medical officers on which to erect a structure fit to bear the strain of war. The efficiency of the army medical department can be secured only by the creation of public interest and sentiment on the subject. In securing good sanitation we have greater difficulties to encounter than the Japanese had. The Japanese recognize that good sanitation depends, to a great extent, on the good teaching of personal hygiene to the individual officers and men. With them this is comparatively easy, as their war army, though far greater than their peace army, is made up from active and reserve lists of the regular establishment only, and all officers and men are consequently well instructed. America, on the other hand, has but a small army in peace which has to be augmented largely by absolutely untrained men, so that if America wishes to rival Japan in low morbidity rates she will have to teach hygiene outside the army. This can be done by good instruction in personal hygiene in the schools. This means the instruction of a people. It will benefit not only the army, but the entire public.

The army medical department in this country has already done much. The military forces are in a state of transition, but they are approaching logical organization. They have been hampered by lack of personnel, but they have succeeded in having passed "A Bill to Increase the Efficiency of the Medical Department of the Army." Since then it has been possible to devote more time in other directions.

Book Notices

INTESTINAL AUTOINTOXICATION. By A. Combe, M.D., Professor of Clinical Pediatry at the University of Lausanne (Switzerland) together with an Appendix on the Lactic Ferments with Particular Reference to Their Application in Intestinal Therapeutics, by Albert Fournier, Formerly Demonstrator at the Sorbonne, Paris. Authorized English Adaptation by William Gaynor States, M.D., Clinical Assistant in Rectal and Intestinal Diseases, New York Polyclinic. Cloth. Pp. 461, with Illustrations. Price, $4.00. New York: Rebman Co., 1908.

An English translation of this book, which has marked a great step in advance in French literature, ought to find a warm welcome in this country. Combe is a past master in the art of dietetic therapeutics, and commands attention even from those who do not accept in full the theory of autointoxication. The object of his book is to make known his methods of treatment, the discussion of which occupies 202 pages, or almost one-half of the text.

The other part of the book is taken up by a detailed consideration of the "scientifically verified theory" of autointoxication, the distinct pathogeny of the condition, its symptomatology and prognosis. Combe limits his study to autointoxications produced by toxic substances derived from albumin. Thus he entirely ignores the results of the important researches of Finkelstein. Furthermore, to him autointoxication is only the toxemia produced by substances decomposed within the body by vital processes of the organism. He eliminates, therefore, all intoxications in which the toxic substances are formed outside of the body and also those in which the decomposition takes place inside the body but through the activity of microbes accidentally introduced from without. Whether the present status of biologic chemistry and our knowledge of the normal intestinal flora permits such sharply drawn limits may be open to discussion. At any rate, the subject to which Combe limits himself gives him sufficient material to fill more than one-half of the book. His chapter on the chemistry of toxic substances derived from the protein molecule is based on the researches of the German school, while in the discussion of experimental pathology he follows almost entirely the work of Charrin and his co-workers. The chapter is full of suggestions and gives a connected account of one of the most disputed topics of internal medicine. Complete reference to the literature, given throughout, ought also to prove stimulating for further research.

In the chapters on symptomatology and diagnosis Combe shows himself the wise observer of the individual case and the results of laboratory analysis. While to Bouchard, the founder of the theory of autointoxication, this was in most cases merely an expression of gastric dilatation, there exists for Combe a wealth of pathognomic symptoms which permit diagnostic interpretation. He is, however, not guilty of making systematized deductions from isolated findings, especially in regard to the excretions, as so many recent authors, the French, in particular, have done. He understands how to weigh critically and to apply individually. The direct observation of the patient himself has not less value than the result of chemical analysis. From this point of view his interpretations of the results of urinalysis are novel and suggestive. Here for positive deductions from the quantitative analysis he calls attention to the necessity of determining not only absolute quantities, but also the ratios between matters excreted. Bouchard's coefficient, stating the ratio between the amount of urea and the total residue, for him still denotes the vitiation of metabolism and insufficiency of nutrition in autointoxication, although he seems to place more diagnostic reliance on his own coefficient, indicating the ratio between aromatic bodies and total nitrogen, as a better measure of intestinal autointoxication.

The chapter on treatment will merit the closest study by American readers. Intestinal antisepsis and medicinal therapeutics in general are put into the secondary position which they undoubtedly deserve. The closest and most detailed attention is given in their stead to the alimentary régime. The lucid description of the grape cure little practiced here, the lacto-farinaceous régime, the use of yeasts, and especially of the pure cultures of the bacillus of Massol and the lactic acid bacillus, recommended by Metchnikoff, intestinal lavage

and oleoclysms will merit careful study and stimulate useful application. Detailed recipes add very materially to the value of this work.

The translation is good, but by no means perfect. One is frequently shocked by misspelled words which ought to be avoided in a work of such importance. The dipthongs "œ" and "æ" are used with little discrimination; Kühne is Kuhne throughout the book, Homburg is Homberg, hyphomycetes are hypomycetes, lipolytic is lypolyptic, dyscrasic is dycrasic, a tubercle bacillus is a tubercular bacillus. In a revised edition such errors will, of course, be corrected.

VENOMS, VENOMOUS ANIMALS AND ANTIVENOMOUS SERUM-THERAPEUTICS. By A. Calmette, M.D., Director of the Pasteur Institute, Lille. Translated by Ernest E. Austen, F.Z.S. Cloth. Pp. 403, with illustrations. Price, $5.00. New York: William Wood & Co., 1908.

Our knowledge of the constitution and physiologic action of venoms of various kinds has made great advances during the last fifteen or twenty years. The discoveries of Roux and Behring with respect to the toxins of tetanus and diphtheria immediately turned the attention of certain investigators to the promising field for fruitful work with venoms along the same lines as pursued so successfully in the cases of these bacterial toxins. Pioneer and pre-eminent in this special field of research, Calmette now presents in monographic form the chief results of the modern investigations on venoms, venomous animals and antivenomous serum therapeutics. The book takes up the subjects of the classification, description, distribution and habits of venomous snakes; the clinical and physiologic properties of snake venoms; antivenomous serum therapeutics; venoms in the animal series, and "documents" relating to the treatment of persons and animals with antivenomous sera. There are now special laboratories for the preparation of antivenomous sera in all countries in which venomous snakes constitute a formidable danger to human beings and domestic animals. The volume is rich in illustrations of various kinds of snakes and of the most important portion of their anatomy, the head. The work will be of service to all who are really interested in biologic research and especially so to physicians, travelers, naturalists and teachers in countries where poisonous snakes abound, on whom naturally falls the duty of popularizing information in regard to the new treatment among the indigenous peoples.

THE BONE-MARROW. By W. E. Carnegie Dickson, M.D., B.Sc., Edin., F.R.C.P., Edin., Lecturer on Pathologic Bacteriology in University of Edinburgh. Cloth. Pp. 160, with illustrations. Price, $12.00. New York: Longman, Greene & Co., 1908.

This is an elaborate monograph on the structure of the bone-marrow in health and disease, with about 78 pages of text, illustrated with 51 microphotographs and a large series of beautiful water-color drawings covering twelve plates. The illustrations, which merit unstinted praise, are all the work of Mr. Richard Muir, the technician in the pathologic laboratory of the University of Edinburgh. The work consequently is in reality an atlas of normal and pathologic anatomy of the bone-marrow, and as such it will constitute a distinct landmark in the study of this important and generally but poorly understood and neglected tissue. The bone-marrow is the parent tissue of the red corpuscles and also of by far the greater part of the leucocyte series of the formed elements in the blood; therefore, when we consider the extreme readiness with which the marrow and its cellular offspring undergo variations, it is justifiable to assume with Dickson that a closer study of the marrow may throw added light on many phenomena of disease. Modern hematology has given us a number of valuable facts and it is high time that our knowledge of the changes observed in the circulating blood elements in various conditions should be more closely correlated than heretofore with a parallel knowledge of the fundamental changes in the mother tissue. Only in this way may we hope to secure a broader basis for a more penetrating and farther reaching interpretation of the blood changes readily determinable by the methods of blood examinations now so generally in vogue. That generalizations of great clinical importance will be reached as this study progresses can not be doubted. Dickson's work, being essentially morphologic, forms an introduction to the more detailed study of the bone-marrow in special diseases; it gives a good basis on which to start new investigations. Dickson points out there are indications that many diseases now regarded as primary bone lesions, such as osteitis deformans, osteomalacia and osteoporosis, in reality are results of changes in the bone-marrow incidental to reactions on its part to toxic substances introduced or manufactured in other parts of the body. If these diseases come to be looked at from this viewpoint, further investigations into their exact nature may prove more fruitful than the results so far secured. Some of the changes in primary blood diseases—leukemia, pernicious anemia—may also come to be regarded more generally than at present as part of the results of reactive processes in the marrow set in motion by hostile substances. Dickson points out, too, that severe secondary anemias may yet be regarded as the result largely of degeneration in the tissue of the bone-marrow. Destruction of the formed elements of the blood in many acute infectious diseases and other processes may lead to excessive functional activity in the marrow, which in turn undergoes exhaustion and degeneration followed by prolonged anemia. Here further and detailed study are indicated. Dickson's monograph will appeal to hematologists who are interested in the mother tissue of the elements they study so assiduously; and the illustrations are sure to call forth the admiration of all students of the blood and to quicken their wonderment and curiosity in regard to the bone-marrow and the mysterious processes that take place there.

MÉDICAMENTS MICROBIENS: BACTÉRIOTHÉRAPIE, VACCINATION, SÉROTHÉRAPIE. Par Metchnikoff, Sacquépée, Remlinger, Louis Martin, Vaillard, Dopter, Besredka, Wassermann, Leber, Dujardin-Beaumetz, Salimbeni, Calmette: vol. xi, Bibliothèque de Thérapeutique publiée sous la direction de A. Gilbert et P. Carnot. Cloth. Pp. 400, with illustrations. Price, 8 francs. Paris: Librairie J. B. Baillière et Fils, 1909.

This volume is one of a series of twenty-five intended to constitute a library of therapeutics, and divided into three series, on the subjects, respectively of therapeutic agents, medications and treatments. The present volume deals with the microbic medicaments and covers vaccination, including the prophylactic and therapeutic inoculations of dead bacteria or bacterial products, and serum therapy. There is also a chapter by Metchnikoff on so-called intestinal bacteriotherapy, by which is meant the employment of diverse bacteria in order to antagonize certain possibly pathogenic microbes in the intestine. As the list of authors shows, many representative investigators have contributed to the book. The practicing physician who can read French will find in this volume a very satisfactory statement of the present condition of our knowledge of the subjects with which it deals.

SYPHILIS OSSEUSE (SYPHILIS ACQUISE). Par Louis Spillmann, Professeur agrégé à la Faculté de médecine de Nancy. Paper. Pp. 134, with illustrations. Price, $0.85. Paris: G. Steinheil, 1909.

In this treatise the author has left out of account lesions of the bones indirectly attributable to syphilis and has devoted himself to lesions of the bones, which are syphilitic by nature as well as by origin. The first four chapters consider history, etiology, and pathology, while the fifth is devoted to clinical studies of the syphilitic affections of the different bones. Diagnosis and treatment are then taken up. The book was produced under the inspiration of Professor Fournier, whose personal notes and collection of specimens Spillmann has been able to make use of. The twelve plates added at the end of the volume form in themselves a valuable collection of illustrations not hitherto published.

TUBERCULOSIS IN MASSACHUSETTS. Prepared by the Massachusetts State Committee for the International Congress on Tuberculosis, held at Washington, D. C., September, 1908. Edited by Edwin A. Locke, A.M., M.D. Cloth. Pp. 223, with illustrations. Price, Wright & Potter Co., 1908.

This volume was prepared by the Massachusetts State Committee for the last International Congress on Tuberculosis, as a supplement to the general exhibition presented at that congress. It includes an account of the work of the State Board of Health, state inspectors, communities and antituberculosis societies, together with a discussion of bovine tuberculosis, tuberculosis among the insane, among prisoners and industry, and a number of related topics. The book is well illustrated and presents a mass of information of great value to those interested in the subject of the prevention of tuberculosis.

TEXT-BOOK OF NERVOUS DISEASES AND PSYCHIATRY. By Charles L. Dana, A.M., M.D., LL.D. Professor of Nervous Diseases in Cornell University Medical College. Seventh edition. Cloth. Pp. 782, with illustrations. Price, $5.00. New York: William Wood & Co., 1908.

This edition differs little from its predecessors. It has been thoroughly revised and brought up to date, and additions have been made to the sections on histology of the neuron and on anatomy and physiology of the brain, the works of Sherrington, Grünbaum, Campbell and Horsley having made this necessary. A short chapter has been added on psychotherapy, but the subject deserves more attention than Dana has given it here. The chapters on neurasthenia and hysteria have been rewritten, and under the name "psychasthenia" is described the condition designated "phrenasthenia" in the previous edition. Obsolete matter has been deleted, so that the book is not materially enlarged.

EMERGENCY SURGERY. By John W. Sluss, A.M., M.D., Professor of Anatomy, Indiana University School of Medicine. Flexible Leather. Pp. 692, with illustrations. Price, $3.50. Philadelphia: P. Blakiston's Son & Co., 1908.

This is one of a leather-bound series of medical manuals and is of convenient size and shape to carry in one's pocket. It is well bound in flexible leather, copiously illustrated and printed on a good quality of paper. Without attempting to cover the general field of surgery, Dr. Sluss discusses the emergencies which the general practitioner is most apt to encounter. The works of Senn, Walshan, Treeves, Legar, Veau and von Bergmann have been copiously utilized. Many references to current surgical literature also appear. The book will prove of value to general practitioners who are compelled to do a certain amount of emergency work.

DISEASES OF THE NOSE AND THROAT. By Cornelius *Godfrey* Coakley, A.M., M.D., Professor of Laryngology in the University and Bellevue Hospital Medical College, New York City. Fourth Edition. Cloth. Pp. 606, with illustrations. Price, $2.75. Philadelphia: Lea & Febiger, 1908.

This edition is essentially like the preceding ones, except that it contains a chapter devoted to formulas which will be found convenient for the practitioner. Dr. Coakley treats his subject concisely and clearly and describes all the principal diseases of the nose and throat. The book is illustrated by 126 engravings, mostly taken from various well-known authors, and seven colored plates, those illustrating transillumination of the accessory sinuses being very good.

AIDS TO TROPICAL MEDICINE. By Gilbert E. Brooke, M.A., Cantab., L.R.C.P. Edin., D.P.H., F.R.C.S., Port Health Officer, Singapore. Cloth. Pp. 163, with illustrations. Price, $1.00. New York: William Wood & Co., 1908.

This is a good synopsis of what is known of the diseases of tropical countries, and will furnish information to those who wish an outline of those diseases, which, while frequently mentioned in current medical literature, are seldom seen in temperate climates. It contains an appendix in which is given the regulations of examining boards for diplomas in tropical medicine, such as are awarded by the universities of Great Britain.

STUDENT'S HANDBOOK OF GYNECOLOGY. By George Ernest Herman, M.D. (Lond.), F.R.C.P., F.R.C.S., Consulting Obstetric Physician to the London Hospital. Cloth. Pp. 544 with illustrations. Price, $2.50. New York: William Wood & Co., 1908.

In this book Herman has endeavored, by omitting explanatory, argumentative and speculative matter, references to rare cases, and descriptions of the less commonly performed operations, to condense his larger work and to present a small volume especially for students. The result is a volume of 535 pages, closely printed on thin paper, adequately illustrated and excellently arranged. It supplies concise information, without being that bane of the American medical school, the quiz-compend.

GENERAL PATHOLOGY. By Ernest Ziegler, Professor of Pathologic Anatomy and of General Pathology in the University of Freiburg in Breisgau. Translated from the Eleventh German Edition (Gustav Fischer, Jena, 1905). Edited and Brought up to Date by Alfred Scott Warthin, Ph.D., M.D., Professor of Pathology and Director of Pathologic Laboratory in the University of Michigan, Ann Arbor. Cloth. Pp. 781, with illustrations. Price, $5.50. New York: William Wood & Co., 1908.

Among text-books which may be regarded as authorities in medicine, that of Ziegler has reached a very high position. Ziegler's genius and industry were devoted to perfecting this book and keeping it abreast of the advance of knowledge. It was so successful that it reached the eleventh edition before Ziegler's death. In the present translation, edited and brought up to date by Dr. Warthin, it forms a work worthy of commendation. Although the German edition was written in 1904, the intervening years have produced so much investigation on so many subjects as to necessitate the interpolation of a large number of paragraphs in fine print, presenting the most recent results of work in pathology. The translation is well done; the illustrations are numerous and especially clear. A number of them consist of colored plates.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Success in Postgraduate Work.

The Rapides Parish (Louisiana) Medical Society reports that it took up the postgraduate course of study last May and has met regularly every Monday night since the work was begun. The secretary, Dr. J. L. Wilson, says:

"The course of study has entailed on us a great deal of work, but we started out fully determined to keep up with it and we have done so. Recently our president asked Dr. Edmond Souchon, late professor of anatomy of the Medical Department of Tulane University at New Orleans, to furnish us with some anatomic specimens or dissections preserved with his special formula for preserving the muscles and tissues in their natural color. The doctor first wrote us that he would be unable to do so; a few days later, however, he wrote us that he had decided to preserve a subject, send it to us, and come himself, remain with us for a few days, and assist us by giving us demonstrations in surgical anatomy. We profited very much by Dr. Souchon's visit and the members of our society are under lasting and grateful obligations for his interest. We all feel that we have been greatly benefited by the postgraduate course. Every county society would be greatly benefited by taking up this study course. The visit of Dr. McCormack to our state and city was a great stimulus for us. His lectures were an inspiration to the members of the profession such as we have seldom received, and I am sure all those who heard him profited thereby."

Optometry in Drugstores.

The *Ohio State Medical Journal*, in its department of Medical Economics, November, discusses some phases of the optometry bills which have been introduced in various state legislatures and presents a new phase of the question. A Cleveland physician received an announcement from a local pharmacy stating that it carried a complete line of drugs, medicines, optical goods and drug sundries. The physician at once wrote to the druggist severing all business relations with him and adding: "It is bad enough that department stores maintain quack optical departments to the further detriment of human eyes. Drugstores at least have no excuse for entering this field." The editor of the department of economics, in commenting on the incident, says:

"The optometry bill would give legal recognition and professional standing to this sort of imposition on the public confidence; it would establish false relations with medical standards and false assurance with the public. Without stultifying itself, the state can not establish two standards in the same branch of medicine. This bill (the optometry bill) puts a full-fledged physician with years of preparatory and scientific study and final qualification before the state medical board against a tradesman with six weeks of special study. . . . The state can not, in fairness to the profession or in the interests of the laity, lower present standards in ophthalmology. Nor will it do so if the legislator is properly instructed."

The persistent efforts that have been made along this line in the past two years should be carefully noted and under-

stood by all physicians, especially by those interested in medical legislation or those making a specialty of diseases of the eye. In several states the endorsement of unthinking physicians or of sections on ophthalmology has been secured for such legislation, under the specious plea of protection of the public from "incompetent optometrists." (God save the mark!) There is no more reason why the state should protect the public against incompetent spectacle fitters than there is why it should examine and license manufacturers of crutches. The only object of such legislation is to give the "graduate" of some "college of optometry" who has enjoyed the inestimable advantages of a six weeks course of instruction, the privilege of hanging a handsomely engraved certificate of license in his shop window and thereby make the public believe that he has the endorsement of the state. Cults and isms heretofore have sprung up around methods of treatment. This fad seems to have developed around a single organ. If a milkman or a drygoods clerk can learn to treat diseases of the eye in six weeks there is no reason why he can not learn to treat diseases of the stomach or of the lungs in the same time. In fact, there is no reason why he could not select the particular organ of the body which seems especially attractive to him and disregard the parts of the body which he does not care to treat.

The whole proposition reduces itself to an absurdity and its ridiculousness should be impressed on the members of our legislatures so as to put a stop to such farcical legislation.

Department of Public Health—Women Take Action.

The Utah Federation of Women's Clubs, at its recent annual meeting at Provo, Utah, adopted resolutions approving the "proposed segregation, concentration, reference and transfer to one department of all matters or questions arising out of or relating to public health and sanitation."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fourth Month—Fourth Weekly Meeting.

DISLOCATIONS OF THE RIBS.

RIBS.—1. Costo-vertebral, pathology, complications, diagnosis. 2. Costo-sternal, first seven ribs, diagnosis, treatment. 3. Costo-costal, eighth, ninth and tenth, causes, treatment.

DISLOCATIONS OF HIP AND KNEE.

HIP.—1. Backward.—(a) Dorsal, iliac or ischiatic: direction of violence, injury to capsule, to ligamentum teres, rim of acetabulum, sciatic nerve, gluteal vessels, quadratus femoris, pyriformis and obturator. Diagnosis, adduction and flexion, inward rotation, shortening, trochanter. Treatment. Smith's manipulation (Bigelow). Stimson's method. (b) Everted dorsal. 2. Downward and Inward—(a) Obturator: Pathology, diagnosis, treatment. (b) Perineal: Differs from obturator, diagnosis. 3. Upward and Forward.—Suprapubic: Iliopectineal or pubic forms, central; diagnosis, method of reduction. 4. Upward (Supracotyloid or subspinous). 5. Downward (Infracotyloid).

KNEE.—1. Forward. 2. Backward. 3. Lateral (inward or outward). 4. Dislocation by rotation. Diagnosis, complications, treatment.

PATELLA.—1. Outward. 2. Inward. 3. Vertical.

DISLOCATIONS OF ANKLE AND FOOT.

ANKLE.—1. Sagittal.—(a) Backward:: Causes, pathology. (b) Forward: Diagnosis, pathology, treatment. 2. Lateral.—(a) Outward: Pathology, diagnosis, treatment. (b) Inward: Pathology, diagnosis.

TARSAL BONES.—Subastragaloid.—(a) Inward, (b) outward, (c) backward, (d) forward: Relations of astragalus, os calcis and scaphoid, and diagnosis in each form.

METATARSALS AND PHALANGES.

Monthly Meeting.

Diagnosis and Differentiation of Dislocations of Hip Joint.
Treatment of Tuberculosis of the Joints.
Diagnosis and Treatment of Complicated Dislocations.

Medicolegal

Various Points Concerning Insane Delusions and Demand of Change in Declaration as to Monomania.

The Supreme Court of Arkansas says, in Taylor vs. McClintock, that the test of testamentary capacity is necessarily the same, whether the insanity be attributable to dementia or insane delusion—paranoia. "Paranoia" is a term used by medical experts, alienists, and authors on medical jurisprudence to designate the form of insanity characterized by systematized delusions. A systematized delusion is one based on a false premise, pursued by a logical process of reasoning to an insane conclusion. There is one central delusion, around which other aberrations of the mind converge. The term "paranoia" takes the place of the "monomania" or "partial insanity," and includes all that was formerly meant by that word, but is considered a more accurate term to describe the peculiar form of delusional insanity.

It is unquestionably true that one may be possessed of a delusion concerning one subject, and yet be of sound mind on all other subjects, according to the weight of modern authority.

This delusion, which operates to defeat a will made under its influence, may be defined as follows: Where one conceives something extravagant and believes it as a fact, when in reality it has no existence, but is purely a product of the imagination, and where such belief is so persistent and permanent that the one who entertains it can not be convinced by any evidence or argument to the contrary, such a one is possessed of an insane delusion. The above is substantially the definition of Sir John Nichol in 1826 in the great case of Dew vs. Clark, 3 Add. Ecc. 79, and it is one that has been approved and followed by a majority of cases and text-writers ever since.

A delusion can not be predicated on any purely esoteric and abstract subject, for the reason that beliefs concerning such subjects are speculative, and could not be proved false.

Evidence is the means by which facts are proved. All evidence must be addressed to the sane mind. That which no sane mind would believe at all does not rise to the dignity of evidence; and a belief in something that no sane man could believe is evidence of insanity.

Evidence, in a legal sense, is external. It is brought into the mind through the senses, by the mental faculty of perception, and appropriated by the faculty of reason. Therefore, any evidence will produce some sort of impression or belief in the mind, correct or incorrect. It is a solecism to speak of a belief that is based on any evidence as an insane belief or delusion. A belief grounded on evidence, however slight, necessarily involves the exercise of the mental faculties of perception and reason; and where this is the case, no matter how imperfect the reasoning process may be, or how erroneous the conclusion reached, it is not an insane delusion. The legal requirements of a delusion were not met by the testimony of medical experts defining a delusion as "a belief, an idea, held by a person against such ordinary average information or experience as would to the ordinary average individual prove sufficient to cause him to give up the idea."

But not only were there apparently votes lacking to make the court hold, but Chief Justice Hill and Justice Battle protested against holding, that, as a matter of law, a person may be entirely sound mentally on all subjects or as to all individuals save one, and as to that particular subject or individual his mind may be so diseased as to render it impossible to say that he is of sound mind and is capable of reasoning and exercising a sound judgment in regard to the delusion.

This division of insanity into partial and total originated, judicially, the Chief Justice says, with Sir Matthew Hale, when Lord Chief Justice of England in the reign of Charles II. This great jurist did much for the laws of England, yet was not sufficiently beyond his generation to enforce the law against witchcraft (he was the last English judge before whom a person was convicted and sentenced to death for witchcraft). Still his division of sanity is followed by many courts and many alienists.

In view of the disagreement between learned doctors, it is not the province of the court to side with either. It is not a legal question; but the question of insanity is a question of fact, and the learned doctors may explain it in their own way according to their own theories to the satisfaction or dissatisfaction of the jury, but still the question remains with the jury to decide whether the particular person was sane or insane.

When scientists are agreed on these questions, it may be well for the courts to state the scientific conclusion; but when scientists are at large on it, it is not the province of the court to accept either theory, but to leave it, as all other questions of fact, to be determined in the particular instance. In the cases in this and other courts cited in the other opinion in this case, the scientific and legal definitions were accepted without question; but the evidence in this case showed, or tended to show, that the scientific world, or an important part of it, has departed from those theories, and the courts should not blindly follow precedents based on other data.

Claims of Special Surgeons Called in to Operate on Unconscious Fatally Injured Person.

The Supreme Court of Washington says that the plaintiffs in the case of Cunningham and another vs. Lakin were physicians and surgeons, of Spokane, who sued the estate of one Lakin for professional services rendered him during his last illness. It appeared that Lakin had been kicked in the head by a horse, sustaining fractures of various bones of the face and skull and severe injuries to the brain, from which he was rendered unconscious, in which condition he remained until several hours after being operated on by the plaintiffs.

An employé of Lakin who was assisting him in the work he was performing at the time he received said injuries, called a local physician who found that the only hope of saving the life of Lakin lay in a major surgical operation, could not procure the necessary equipment at any nearer place than Spokane, and he would require the assistance of skilful surgeons in the operation. All this he informed the nearest living relative of said Lakin, who was then assuming to represent him and had assumed charge of the management of his affairs. Then, being told to procure the services of skilful surgeons, and to have the operation performed, and to have rendered such professional services, care and treatment as might be deemed most expedient, said physician summoned the plaintiffs, who performed said operation and treated Mr. Lakin until his death.

The objection was raised that no contract of employment on the part of Lakin was shown for the services by the physicians, and no subsequent ratification or agreement to pay on his part after the services had been rendered. The Supreme Court concedes this, but holds that the right of the physicians to recover for the reasonable value of their services, under circumstances such as were shown here, does not rest on any contract with the injured person, either express or implied, but is recoverable by virtue of the statute. Services of the character here rendered are classed as expenses of the last sickness, and are given a preference right of payment over all ordinary debts out of the estate of the decedent. It is true that services of this character differ from administration and funeral charges, in that they are rendered during the life of the person on whose estate they are made a charge, but the necessity for their rendition is similar to that of the latter, and the law authorizing their payment can be justified on like principles.

Whether the charges made by the surgeons were reasonable was a question to be determined from the evidence.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

November 21.

1 *Possibility of Avoiding Conspicuous Scar Formation in Softened Tuberculosis of the Cervical Glands. W. Meyer, New York.
2 *Obstinate Vomiting, or the Personally Conducted Baby. W. P. Northrup, New York.
3 Endothelioma of the Pleura. H. B. Delatour, Brooklyn, N. Y.
4 Locomotor Ataxia: A New Theory and Treatment, with Cases. L. N. Denslow, New York.
5 Pancreatitis: With Illustration of Crystals of Pancreatic Reaction, According to Cammidge's Test. M. R. Barker, Chicago.
6 Three Unusual Cases of Appendicitis. C. W. Trueheart, Galveston, Tex.
7 Malaria on the Isthmus of Panama. W. E. Deeks, Panama.

1. **Tuberculous Cervical Glands.**—Meyer praises Bier's method as a means of avoiding scars. The rubber bandage is worn 11 out of 12 hours and fluctuation watched and encouraged. A short cut is then made in the course of the neck fold. If muscle or fat overlaps the incision a small drain is introduced for from 24 to 30 hours. Otherwise the wound is left open and suction treatment started from 4 to 6 hours later by the cups which are used once daily for 45 minutes. Packings and injections are never used.

2. **Obstinate Vomiting.**—Northrup describes a case that leads to the following conclusions:

1. A nursing baby may vomit because its food enters the stomach too rapidly and consequently in too great quantities.
2. The cause of this overdistention may be sought in the large quantity of breast-milk, easy flow, large nipples, vigorous nursing.
3. The above conditions may be overcome by imposing mechanical obstructions, "drinking up-hill," being here suggested.

In the reported case, the successful position was, sprawling head downward and face downward over the mother's shoulder to the nipple, like a squirrel coming down a tree.

New York Medical Journal.

November 21.

8 *Nature of Carcinoma in General, and the Early Diagnosis of Gastric Carcinoma. J. M. Anders, Philadelphia.
9 Iron (continued). J. Knott, Dublin, Ire.
10 Four Hundred and Twenty-two Cases of a General Surgical Nature from the Surgical Service of Fordham Hospital. A. Nicoll, New York.
11 *Lipoma of the Kidney. O. W. H. Mitchell, Columbia, Mo.
12 *Study of Spores Developed at an Elevated Temperature. B. R. LeRoy, Athens, Ohio.
13 *Pulsation of Large Aneurisms, Nonexpansile, but Transmitted. S. Lange, Cincinnati.
14 An Adjustable Lens for Oblique Illumination of the Eyes. S. W. Newmayer, Philadelphia.

8. Abstracted in THE JOURNAL, Oct. 31, 1908, p. 1541.

11. **Lipoma of the Kidney.**—Mitchell says that as regards the etiology all the following views appear plausible, and in a broad classification should be included until proved to the contrary:

1. The congenital tumors may develop, (a) from fat with imbedded portions of the adrenal; (b) from fat at the hilum; (c) by metaplasia of connective tissue.
2. The acquired tumors may develop, (a) by metaplasia of the connective tissue; (b) by extension of fat tissue from the hilum into the interstitial tissue of the kidney. The last view (2.b) seems plausible, since the kidneys of fattened domestic animals show this condition to be present frequently.

12. **Spores Developed at High Temperature.**—LeRoy's paper is an answer to inquiries concerning his paper on "Etiology of Psoriasis" (*New York Medical Journal*, April 25, abstracted in THE JOURNAL, May 9, 1908, p. 1560). In it he describes the growth and development, motion, changes of form, etc., of the organism therein referred to. He adds that the first patient mentioned in his former article is now almost free from psoriatic eruption and he feels confident that he will be permanently cured.

13. **Aneurism.**—Lange points out that expansile pulsation is laid down in text books as an almost infallible pathognomonic sign of aneurism. He endeavors to show that an aneurism which is large enough to impinge on and impart its pulsation to the chest wall will not, as a rule, execute expansile pulsations, but will simply transmit pulsations from the blood current passing through it, or more often from the

heart. The smaller aneurisms do execute expansile pulsations, but the pulsation disappears as the result of the accumulating clot, before the tumor is large enough to impinge on the chest wall and manifest its characteristic pulsations to the palpating hand.

Boston Medical and Surgical Journal.

November 19.

15 *Acute Gonorrheal Epididymitis; Operative Treatment. J. H. Cunningham, Boston.
16 *The Law and Medical Experts; Codes of Criminal Procedure of European Countries. C. G. Cumston, Boston.
17 Bursitis Subacromialis, or Periarthritis of the Shoulder-Joint. (Subdeltoid Bursitis) (Continued). E. A. Codman, Boston.

15. **Acute Gonorrheal Epididymitis.**—Cunningham discusses the etiology and characteristics of this condition, its pathology, prognosis, and symptomatology. He describes the usual method of treatment and urges operative interference, which, he says, brings the suffering to abrupt ending, arrests the acute process, and shortens the duration and the convalescence. It is simply applying the general surgical principle of drainage to the infected organ. He describes Hagner's technic, which essentially consists of a two-inch incision at the junction of epididymis and testicle, the opening of the tunica vaginalis and puncture of the epididymis with a sharp-pointed knife. If pus escapes the opening should be enlarged and washed out with a 1 to 1,000 solution of corrosive sublimate, followed by salt solution. A cigarette drain is used. A continuous catgut suture closes the tunica vaginalis and a lockstitch horsehair suture the scrotal skin. Moist bichlorid of mercury dressings and a scrotal support to testicle complete the process.

16. **Law and Medical Experts.**—Cumston discusses a recent criminal case in New York and summarizes the French, Austrian, Belgian, German and Spanish laws in relation to medical expert work.

Northwestern Lancet, Minneapolis.

November 15.

18 *Present Management of Smallpox in Minnesota. H. M. Bracken, St. Paul.
19 Course of Instruction for Sanitarians and Sanitary Inspectors. F. F. Wesbrook, Minneapolis.
20 Present Status of Smallpox in Minnesota. G. W. McIntyre, St. Peter, Minn.
21 Tuberculosis and Poverty. E. T. Lies, Minneapolis.

18. **Smallpox in Minnesota.**—Bracken recounts the steps which led up to the recent health ordinance in Minnesota, abolishing quarantine in smallpox and relying solely on vaccination. The ordinance came into effect in the midst of an epidemic of a mild type of smallpox. While the number of cases did increase during the first four months after the new regulations went into effect, the statistics of Minneapolis, St. Paul and Duluth, which remained under the old régime, made no better showing in the morbidity rates than the state did under the new regulations, so that the increase can not properly be attributed to them. In consequence of the objections raised by the health commissioner of Chicago the latter was asked to advise the Minnesota state board of all smallpox infections reaching Chicago from Minnesota. This was done, and three cases were reported, but inasmuch as one came from St. Paul and one from Duluth, which were under the old regulations, the new regulations for the state could not be held responsible. Bracken analyzes the sources of imported smallpox infections in Chicago, from January 1 to July 25, 1908. They numbered 36, one of which was from a district of Minnesota under the new regulations, and 35 from cities or states still practicing rigid quarantine for smallpox. Chicago, with its 47 infections, is also supposed to be under rigid quarantine supervision. The plan adopted by Minnesota has been followed by North Dakota, and is now under consideration by one of the western Canadian provinces and one of our western states; the latter case in a more radical form than that existing in Minnesota. The article concludes as follows: "On deliberate consideration of conditions the Minnesota State Board of Health feels that it has made no mistake in its new regulations unless it is that they are not sufficiently radical."

Surgery, Gynecology and Obstetrics, Chicago.

October.

22 *Principles on Which the Success of Surgical Treatment of Retrodisplacements of the Uterus Depends. R. C. Coffey, Portland, Ore.
23 *Operations of Ventrifixation or Ventrosuspension of the Uterus and Shortening the Round Ligaments. W. Alexander, Liverpool.
24 Scopolamin-Morphin Anesthesia. R. R. Smith, Grand Rapids, Mich.
25 *Hebosteotomy Compared with Other Procedures in Management of Labor in Contracted Pelves. J. Pfannenstiel, Kiel, Germany.
26 Perforating Wounds of the Uterus Inflicted During the Course of Intrauterine Instrumentation. A. P. Heineck, Chicago.
27 *Diagnosis of Duodenal Ulcer. B. G. A. Moynihan, Leeds, England.
28 Broad Ligament Plication for Uterine Retroversion. C. N. Suttner, Walla Walla, Wash.
29 Primary Implantation of an Ovum in the Pelvic Peritoneum. R. C. Hirst and N. Knipe, Philadelphia.
30 Primary Carcinoma of the Body of the Uterus. C. N. Ballard, Chicago.
31 *Immediate vs. Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy. F. Krug, New York.
32 Puerperal Salpingitis. L. V. Friedman, Boston.
33 Delivery of the Fetal Head After Decapitation. J. C. H. Leicester, Calcutta, India.
34 Radical Operation for Cure of Oblique Inguinal Hernia. F. G. Connell, Oshkosh, Wis.

22. **Retrodisplacements of the Uterus.**—Coffey's paper is an elaborate study illustrated with colored plates and half tones. He arrives at the following conclusions: The ideal operation for retrodisplacements of the uterus consists in some form of operation which shortens the anterior fold of the broad ligament, at the same time temporarily utilizing the round ligament for its accompanying connective tissue, but which uses absorbable sutures and thus makes provision for complete recovery of the position and function of the round ligaments as soon as the sutures are absorbed.

23. **Ventrifixation.**—Alexander has never performed either ventrifixation or ventrosuspension, because he believes that all such operations are fundamentally opposed to Nature's plan. His *a priori* objections have been confirmed by numerous reports of serious results, and he has had within a few weeks of each other two patients in his clinic on whom such operations have been performed, and in whom such a distressful condition existed that the uterus had to be released. This afforded a full opportunity for seeing the anatomic, as well as the clinical, results of the operation. He reports the cases. In the first, a patient, the subject of some prolapse without other symptoms, was rendered miserable after operaiton by incontinence of urine and constant pain, far more serious troubles than she had previously suffered from. On operating Alexander found the internal relations of the pelvic organs entirely changed. The uterus hung awkwardly from the abdominal wall, with the fundus projecting backward, as an obstacle against which the intestines could beat, and the great omentum had numerous adhesions to the various parts in the neighborhood of the old scar. The corpus uteri was changed into a long cord. When the adhesions were removed and the round ligaments curtailed, the uterus assumed rapidly its normal shape, the symptoms disappearing as if by magic. A similar condition of things obtained in the second case. Alexander holds that for retroflexion the treatment most in accord with the economy of Nature is to straighten out the uterus to a natural shape and shorten the round ligaments externally. He maintains also, from his own practical experience, that the shortening of the round ligaments in prolapse, when associated with repair or advancement of the perineum, is permanently effectual even in very bad cases. He describes his procedure and gives the reasons why the method is so effective.

25. **Hebosteotomy.**—Pfannenstiel is convinced that hebosteotomy is a great advance in obstetrics, and that with proper technic and observance of indications, and without increased danger to the mother, we shall succeed in securing a considerable percentage of children that were lost by former methods of delivery.

27. **Duodenal Ulcer.**—Moynihan arrives at conclusions, of which the following is a summary:

1. The operative treatment of stomach disorders should be confined exclusively to those cases in which an organic lesion is present.
2. In cases of acute perforating ulcer, the perforation should be closed or the ulcer excised.
3. When a non-malignant lesion is discovered, the treatment appropriate to it depends on its position in the stomach.
4. If the ulcer be prepyloric or duodenal, gastroenterostomy should be performed.
5. The most satisfactory method of gastroenterostomy is the posterior no-loop operation, with the almost vertical application of the bowels to the stomach.
6. Regurgitant vomiting occurs as a result of the "loop" operation, whether anterior or posterior. It is relieved almost certainly by an enteroanastomosis.
7. In cases of hour-glass stomach the surgical treatment necessary presents special difficulties on account of the frequency of a dual lesion.

He epitomizes as follows the surgery of benign disorders of the stomach and duodenum: In cases in which genuine organic disease of the stomach or duodenum has been present, and that treatment which his present experience would indicate as appropriate has been adopted, surgical measures have been attended with a small mortality, and the relief afforded has been complete and permanent. In cases in which the evidence of structural disease was insignificant or absent, the result has been indifferent or positively bad. The scope of such operations as Rodman's, the excision of the ulcer-bearing area, and of the excision of ulcers on the lesser curvature and toward the cardia, should unquestionably be broadened. Moynihan has been in error in several cases in resorting to gastroenterostomy instead of to the more radical and perhaps equally safe procedures.

31. Abstracted in THE JOURNAL, June 20, 1908, p. 2100.

Archives of Internal Medicine, Chicago.

October.

35 Salt Elimination in the Urine of an Individual with General Edema of Obscure Origin, Followed by Cure. H. C. Jackson and A. W. Elting, Albany, N. Y.
36 *An Unusual Paroxysmal Syndrome, Probably Allied to Recurrent Vomiting. T. C. Janeway and H. O. Mosenthal, New York.
37 Infection of Man by Dipterous Larvæ. N. C. Gilbert, Chicago.
38 Urinary Findings in a Series of Infants Suffering from Intestinal Infection. J. H. M. Knox, Baltimore, and J. C. Meakins, New York.
39 Ten Cases of Epidemic Cerebrospinal Meningitis Treated with Antimeningitis Serum. J. D. Morgan and W. W. Wilkinson, Washington, D. C.
40 Bacteriology of Acute Rheumatism. L. N. Loeb, Chicago.
41 *Clinical and Pathologic Study of a Case of Adams-Stokes' Disease. H. G. Beck and W. R. Stokes, Baltimore.
42 Tricuspid Stenosis, with Report of a Cure. W. W. Herrick, New York.
43 Inhibition of Pancreatic Activity by Extracts of Suprarenal and Pituitary Bodies. R. Pemberton and J. E. Sweet, Philadelphia.

36. Abstracted in THE JOURNAL, May 30, 1908, p. 1819.

41. **Adams-Stokes Disease.**—Beck and Stokes describe a case, which they illustrate with half tones and colored plates. The character of the attacks did not vary much, except in degree. Some were apparently much more severe than others. They were usually preceded by a distinct aura, which was in the form of sounds resembling the ringing of bells or music. This was associated with intense pain in the right side of the head and face. There were also spasmodic contractions of the muscles in this area. During this stage, the patient rose up in bed, grasped the right side of the face with the right hand and groaned. He soon afterward sank into unconsciousness, which lasted five to fifteen seconds. During this period the color of the face was an ashen gray; the lips were cyanotic and the breathing was slow, irregular, and stertorous. After returning to consciousness, the patient sank his head into the pillow and lay exhausted, with beads of perspiration on the face and extremities. In all the earlier attacks and the minor attacks during the course of the disease, unconsciousness was not complete and the other symptoms were not so marked. A record taken shortly after a series of seizures with syncope and convulsive movements shows a brief stoppage of the ventricles without any other associated phenomena. The tracing shows distinctly the acceleration of the auricular beat with a diminished contraction, a condition which usually precedes a ventricular pause. During the stage in which the auricular impulse was feeble, the ventricles contracted independently of the auricles, causing complete heart block. Finally, when the auricular rhythm became more regular and the force of the contraction stronger, every other beat stimulated the ventricles to contraction, thus producing a 2:1 rhythm. At autopsy it was found that the primary lesion in this case consisted in marked calcareous infiltration of the auriculoventricular groove and its surrounding muscular and fibrous tissue. This produced pressure on the bundle of His, causing extensive fibrous myocarditis with atrophy of the muscular fibers. These conditions must have interfered with the normal transmission of the muscular impulse from the auricles to the ventricles, thus producing the symptoms described in the paper.

Bulletin of the Lying-In-Hospital of the City of New York.

June.

44 An Epidemic of Pemphigus Neonatorum. H. J. Schwartz, New York.
45 *Case of Ectromelia, Associated with Other Deformities. G. W. Kosmak, New York.
46 Splenectomy for Enlarged Wandering Spleen, Complicating Early Pregnancy. A. B. Davis, New York.
47 Congenital Syphilitic Osteochondritis, Simulating Erb's Paralysis. T. H. Myers, New York.
48 *Injuries in the New-Born Produced by Attempted Artificial Respiration. W. A. Morgan, New York.
49 Four Successive Cesarean Operations on One Patient. A. B. Davis, New York.
50 Multiple Pregnancies in Double Uteri, with Report of Case of Uterus Didelphys Containing a Simultaneous Full Term Pregnancy in Each Uterus. C. F. Jellinghaus, New York.

45. **Ectromelia.**—Kosmak reports, with an illustration, a case showing entire absence of the upper extremities. The left eye is represented merely by a small hard globular mass. There is no upper lip, not a dimple indicating where the arms ought to appear on the shoulder-girdle; also other deformities. The author assumes that in this case we are dealing with an instance in which a lack of germinal substance is probably the etiologic factor in the production of the deformities.

48. **Artificial Respiration in the New-Born.**—Morgan points out that the methods of resuscitating new-born infants are by no means free from danger, if indiscriminately or carelessly used. He reports cases. He describes what he considers a very satisfactory method of treating asphyxia in the new-born. After delivery of breech the child should be immediately inverted and held in that position until respiration becomes deep and regular. If there is any evidence of foreign material in the throat the pharynx should be gently stripped in the direction of the chin, the oropharynx swabbed with gauze or wet cotton, and the contents of the nose squeezed out. Catheterization of the larynx is rarely necessary. A few sharp slaps on the buttocks will usually aid the desired result. If the condition is more serious, as evidenced by the general cyanosed appearance of the child and by the diminished heart action, which can be most readily ascertained by placing the finger on the cord, it should be separated from the placenta in order that the movements may be less restricted. The child must be kept warm constantly by immersing in hot water or wrapping in hot towels. While in the tub, Sylvester's method may be resorted to. Removing the child at intervals and sprinkling its body with cold water, powerfully stimulates respiration. Mouth to mouth insufflation may be practised by resting the back of the neck on the edge of the tub and supporting the head with one hand, while pressing on the epigastrium with the other. Only the first of the expired air is to be used and the nose should not be compressed but left entirely open, in order that there may be free passage for any excess of air injected. Laborde's method may be used by an assistant at this time. The hypodermic injection of ether, camphor or whisky is beneficial at times.

Journal of Infectious Diseases, Chicago.

October.

51 *Rate of Multiplication of *Bacillus coli* at Different Temperatures. M. A. Barber, Kansas City, Kan.
52 *Value of the Agglutination Reaction and of Bacteriologic Methods in Diagnosis of Glanders. K. R. Collins, New York.
53 *Comparison of Practical Methods for Determining the Bacterial Content of Milk. P. G. Heinemann and T. H. Glenn, Chicago.
54 *Variability in the Diphtheria Group of Bacilli. H. M. Goodman, Chicago.

55 *Resistance of Embryonic Epithelium, Transplantable Mouse Cancer, and Certain Organisms, to Freezing with Liquid Air. H. R. Gaylord, Buffalo, N. Y.
56 *Chemistry of Anaphylaxis. H. G. Wells, Chicago.

51. **Multiplication of Bacillus Coli.**—By an ingenious method Barber has studied the reproduction rate at different temperatures of the colon bacillus. Reproduction begins at about 10° C., increasing rapidly to about 37°, where it reaches its maximum rate, with a generation time of 17 minutes. It maintains this rate nearly constantly until the temperature reaches 45°, when the rate falls rapidly. Hence it is not probable that any temperature of the body during fever is of itself high enough materially to affect the reproductive rate of pathogenic bacteria, at least not that of the colon bacillus.

52. **Agglutination of Glanders Bacillus.**—Collins concludes that positive agglutination of the glanders bacillus by horse serum in dilution of 1 to 1,000 indicates latent or active infection of the horse furnishing the serum; while in human cases agglutination with dilutions above 1 to 100 would undoubtedly indicate glanders.

53. **Determining the Bacterial Content of Milk.**—Heinemann and Glenn emphasize the fact that the bacteriologic and chemical examination of milk should be conducted with the special object of improving the whole milk supply of a community, and that naturally for this purpose the most accurate, scientific methods of examination are to be used. The article indicates certain improvements on the previous bacteriologic methods of milk examination.

54. **Variability of Diphtheria Bacilli.**—From extensive experiments Goodman reaches the result that the division of the diphtheria group of bacilli into several different species is probably not warranted and that all the forms that have been described under different names are simply variants of a single species, *Bacillus diphtheriæ*.

55. Commented on editorially in THE JOURNAL, Nov. 14, 1908, p. 1701.

56. **Anaphylaxis.**—Wells has studied certain phases of the chemistry of hypersusceptibility. He finds that egg albumin freed from other proteins of egg white sensitizes in doses as small as 1/20 of a millionth of a gram, fatally in doses of one millionth of a gram, and that the minimum lethal dose for sensitized pigs is about ½ a milligram, by intraperitoneal injections, and from 1/10 to 1/20 milligram when injected into the circulation. When so small a quantity of egg albumin is fatal to sensitized pigs he thinks it improbable that the injected protein itself causes death by liberating toxic substances on being split up. He regards it as more probable that if poisonous substances are produced they come from the cells of the intoxicated animal, or possibly the whole reaction may be different from ordinary intoxication. The minuteness of the sensitizing and intoxicating doses of pure albumin indicates further that in this particular protein the two agents, the sensitizing and the intoxicating, are either one and the same or different portions of the same molecules.

Southern Medical Journal, Nashville, Tenn.

October.

57 *Adenoids. G. C. Savage, Nashville.
58 Diagnosis of Sarcoma. W. A. Bryan, Nashville.
59 Renal Calculus. P. Bromberg, Nashville.
60 Pathology and Treatment of Chronic Prostatitis. W. C. Bryant, Atlanta.
61 *Malaria as a Cause of Purpura Hemorrhagica. W. H. Deaderick, Marianna, Ark.
62 Malaria, Its Prophylaxis and Treatment. C. Thorington, Montgomery, Ala.
63 Anesthesia. Deductions from One Thousand Cases. W. M. McCabe, Nashville.
64 *Strongyloides stercoralis*, with Report of Three Cases from Tennessee. C. E. Brush, Nashville.
65 Actions of Certain Drugs on Blood Vessels. J. B. Guthrie, New Orleans.
66 Extrauterine Pregnancy. J. Overton, Nashville.

57. **Adenoids.**—Savage discusses this condition, and, as regards treatment, holds that the curette and forceps, and even the finger, are not worthy of comparison with the Gradle adenotome. He describes the method of its use.

61. **Malarial Purpura Hemorrhagica.**—Deaderick remarks on the rarity of purpuric eruptions associated with genuine hemorrhages in malaria, and reports the case of a white woman who lived on a shanty boat in eastern Arkansas for three years. In the summer of 1907, during a series of chills, purpuric spots appeared all over the body, and hemorrhages occurred from the mouth and nose. The treatment consisted of a teaspoonful every four hours of an elixir containing 5 grains of calcium chlorid to the dram, besides an antimalarial tonic of strychnin, arsenic, iron and quinin. In two months she was practically well (though the spleen was still considerably enlarged) and has had no chills or purpuric symptoms up to date, the longest interval free from chills that she has enjoyed for several years.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

October.

67 Results of the Use of Antimeningitis Serum (Flexner) at the Johns Hopkins Hospital. F. J. Sladen, Baltimore.
68 *Three Cases of Fracture of the Femoral Shaft Treated by the Open Method. T. W. Huntington, San Francisco.
69 Fracture of the Femoral Shaft, with Illustration of a Splint. W. Moncure, Raleigh, N. C.
70 *Tuberculosis of the Bladder. W. Karo, Berlin, Germany.
71 *Treatment of a Case of Hysteria. T. A. Williams, Washington, D. C.
72 *Is Cancer a Disease of Locality? S. W. Dickinson, Marion, Va.

68. **Fracture of Shaft of Femur.**—Huntington reports three cases treated by the open method, that is, by stapling, or "the internal splint," as advocated in the paper by him (*Annals of Surgery*, September, 1908; abstracted in THE JOURNAL, Oct. 17, 1908, p. 1373) and reproduces what are practically the same conclusions. In this article he emphasizes the value of pulley traction in the adjustment of fractures during operation.

70. Published in the *Virginia Medical Semi-Monthly*, Oct. 9, 1908.

71. **Hysteria.**—Williams reports a case, in order to emphasize the importance of recognizing and appropriately treating manifestations which are very common. It shows the efficacy of skilfully conducted suggestion; but the length and difficulty of the treatment of the morale showed that the removal of symptoms is but palliative, and that the true psychotherapy of hysteria consists of the uprooting of the habits of mind due to faulty education, and in the replacement of these by readjustment of the point of view, combined with practice in the acts required to implant it firmly, along with pleasant emotional tone, among the habits of the individual. He indicates this difference in the application of therapy to the hysteric and psychasthenic, in that the latter wishes and seeks for counsel, support and direction, while the hysteric dislikes it at first, to become later only too willing a servant.

72. **Cancer.**—Dickinson reports the following facts in a paper read five years ago, but not previously published: About two and one-half miles east of Marion is a millpond of many years' standing, and around and near about are eight houses. About twenty-five years ago the patient in Case 1 died of cancer, his home being near the head of this pond. Not long afterward Patient No. 2 died of cancer of the breast. A few years later Patient No. 3 died of cancer of the lip and face. Some years later Patient No. 4 died of intercurrent disease, but had cancer of the breast well advanced. Patient No. 5 soon after died of cancer of the lip and face. Patient No. 6 is now confined to bed and if death does not come from some other cause must soon die of cancer of the breast. These people lived close to and around this mill pond on the Middle Fork of the Holston river, and all within a few hundred yards of each other. A few years ago iron ore was mined above them, the water being made muddy, and the people living in these houses all joined in getting an injunction to stop muddying the river, because it made their springs muddy. So it is fair to assume that the water used by them had some connection with the water in the pond and river. In addition to the above six cases, there have been three other deaths of people having cancer not far from this pond, and certainly two of the three frequented the mill at this pond for years and probably used this water. There are said to be now three other people with suspicious sores living in this vicinity, but the nature of these he can not affirm. He has since learned

of the death from cancer of the breast of another woman who lived for some time in one of the houses near the pond; also, of the three suspicious cases mentioned one patient has since died of cancer and another is well advanced in the disease. The author concludes: "However much this paper may point to the infectious nature of cancer, and away from heredity as a cause, it will be a failure if it does not suggest the importance of general practitioners collecting and publishing such clinical facts as may come under their observation, that they may serve as a basis and guide to laboratory workers; for these workers must explain in their theories the clinical facts of disease, before their conclusions can be adopted by our profession."

Wisconsin Medical Journal, Milwaukee.

October.

73 *Practical Applications of Recent Studies in Physiology of the Digestive System. W. B. Cannon, Boston.
74 *Common Source of Nasal Hemorrhage in Persons Previously Healthy. H. C. Langworthy, Dubuque, Iowa.

73. Abstracted in THE JOURNAL, Aug. 8, 1908, p. 524.

74. **Nasal Hemorrhage.**—Langworthy emphasizes the following conclusions:

1. Most cases of nasal hemorrhage in persons previously in good health are due to a local pathologic condition within the nose, usually somewhere on the septum.

2. No matter what may be considered an etiologic factor, immediate tamponing is the treatment of election in all cases where hemorrhage is severe. Other treatment must be considered secondary.

3. With careful inspection of the nasal chamber and discovery of the exact source of hemorrhage, posterior plugging can be dispensed with in most of the cases.

West Virginia Medical Journal, Wheeling.

November.

75 *Plea for Drainage in Abdominal and Pelvic Operations. C. R. Ogden, Clarksburg.
76 Aseptic Operative Technic and Postoperative Treatment of Appendicitis. T. K. Oates, Martinsburg.
77 Treatment of Typhoid. C. T. Arnett, Clarksburg.
78 Psychotherapeutics. J. B. Kirk, Elkhorn.
79 Beriberi. M. T. Micou, Bluefield.

75. **Abdominal Drainage.**—Ogden emphasizes the importance of cul-de-sac drainage in the female, especially in cases in which there is the least suspicion of infection, tuberculosis, many adhesions to break up, in all pus cases, and in cases in which there is great traumatism to surounding parts.

Bulletin Johns Hopkins Hospital, Baltimore.

November.

80 Volume Curve of the Ventricles in Experimental Mitral Stenosis, and Its Relation to Physical Signs. A. D. Hirschfelder, Baltimore.
81 Auricular Fibrillation, Paroxysmal Tachycardia, and the So-called Auriculoventricular (Atrioventricular) Extrasystoles. A. D. Hirschfelder, Baltimore.
82 *Placental Syphilis; a Study of Syphilitic Placentæ with Regard to the Presence of the *Spirochæta pallida*. W. O. Pauli, Baltimore.
83 Method for Complete Enucleation of the Tonsil. J. A. West, Baltimore.
84 Simplification of De Grandmont's Operation for Ptosis. S. Theobald, Baltimore.
85 *Three Cases Illustrating the Relationship between Certain Diseases of the Blood and Sarcoma. F. G. Bushnell, Brighton, England.
86 Teaching of Physiologic Pathology at the University of Michigan. F. P. Mosa, Ann Arbor, Mich.
87 The Tonsillar Ring and the Paranasal Sinuses as Portals of Entry of Infectious Diseases. S. Rosenheim, Baltimore.

82. **Placental Syphilis.**—Pauli reports the results of a study at Johns Hopkins in which 825 placentæ were examined, 25 being diagnosed as syphilitic. Autopsies were held on 16 out of 25 infants, in 14 of which an anatomic diagnosis of congenital syphilis was made. The conclusions to be drawn from this study of the subject are:

1. The *Spirochæta pallida* is rarely found in syphilitic placentæ, and then only after long and tedious search.

2. The anatomic changes observed in the placentæ, are the result of toxins produced by the *Spirochæta pallida* in the fetal organs, and not the immediate effect of the organisms on the villi themselves.

3. The placenta is not the nidus of infection. The fact that the *Spirochæta pallida* is never found in the maternal portion of the placenta, but only in the blood vessels and stroma of the fetal villi, would suggest that the placenta offers greater resistance to the invasion of the organisms, which is probably due to the steady flow of antibodies or immune substances from the mother through the maternal circulation.

85. **Diseases of the Blood and Sarcoma.**—On a study of three cases, Bushnell arrives at the following conclusions:

1. These cases afford evidence that the glandular enlargements and visceral deposits of leukemia are closely allied to lymphosarcoma and that pseudoleukemia and lymphadenoma possess the characters of malignant growths.

2. In leukemia the lymphocytes may be regarded as elements of malignant character.

3. In sarcomatosis, and sarcoma of the lymph glands, changes may occur in the leucocytes (in the presence of transitional cells).

4. No absolute distinction can be drawn between leukemia and sarcoma.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

November.

88 *Occupation Neuritis of the Deep Palmar Branch of the Ulnar Nerve. J. R. Hunt, New York.
89 *Myasthenia Gravis Pseudoparalytica with Negative Pathologic Findings. J. A. Booth, New York.
90 *Trophic Hemiatrophy: Complete. T. J. Orbison, Los Angeles.

88 and 89. Abstracted in THE JOURNAL, July 11, 1908, p. 164.

90. **Complete Trophic Hemiatrophy.**—Orbison has found only 6 cases in the literature. He reports a case in detail and draws the following conclusions: The condition is a pathologic entity; its beginnings are prenatal in time; the etiologic factor is an unknown agent, possibly a toxemia in the fetal circulation, which attacks neuropathic individuals and selects the trophic elements, preferably of the left side; the symptoms are atrophy of the muscular structures (or a retardation of their growth), quickening of the muscular reflexes, with slowing of the electrical reaction time, and without affecting the tendon reflexes materially; asymmetry with accompanying spinal deflection.

Mississippi Medical Monthly, Vicksburg.

November.

91 *Senile Cataract Illustrating the Desirability of Reliable Ophthalmoscopic Examination made while a View of the Fundus is Still Possible. M. H. Bell, Vicksburg.
92 Puerperal Infection. J. O. Gurney, Belzona.
93 The Gall Bladder; Its Diseases and Treatment. H. M. Folkes, Biloxi.
94 Nephritic Colic. Synonyms: Renal Colic, Kidney Colic. S. L. Knight, Hattiesburg.

91. **Senile Cataract.**—Bell reports two cases which indicate very strongly the importance in senile cataract of possessing oneself, if possible, of the records of previous ophthalmoscopic examination. In the one case such a record would have added satisfaction and saved anxiety to the operator had he been able to be assured that the eye was healthy except for the opaque lens. In the other case the existence of previous records prevented a useless operation and the consequent depressing effect on the patient, and warns the surgeon that there is only one chance for securing vision, so that he may take certain precautions insuring more safety than he would were both eyes operable. The cases also show that glasses should not be fitted by any one unable to make and interpret an ophthalmoscopic examination unless normal vision, 20/20, is present in each eye separately with or without proper correcting lenses. In each case many different reading glasses had been fitted previously to the time a specialist was consulted. In one case, fortunately, a record was obtained while still possible, but in the other case no examination had been made, leaving the examiner in much doubt and uncertainty as to just what condition was present behind the opaque lens. The cases also point to the desirability of the general practitioners having the ability to use the ophthalmoscope in just such cases, as they are frequently consulted long before the patient goes to a specialist.

Albany Medical Annals.

November.

95 *Address to Graduating Class of Training School for Nurses of the Woman's and Children's Hospital, Syracuse, N. Y. H. L. K. Shaw, Albany.
96 The Parathyroid Glands. W. Kirk, Troy, N. Y.
97 The Guest, or Personal Experience of a Patient in a Hospital for the Insane, told by Herself (Concluded).

95. **The Parathyroids.**—Kirk says that the total removal of the parathyroids is followed by acute symptoms, tetany, and death, in many animals. In man their complete removal ushers in a set of nervous symptoms of a serious importance. In removal of the thyroid it is often difficult to isolate the little bodies, even in careful dissection, in a field limited in size and partially obscured by hemorrhage and staining of the tissues in the operative field. Hence it is easily assumed

that they may be sacrificed in spite of the most careful precautions taken to ensure their safety. There may be a secondary or accessory blood supply to these small bodies—which would explain the failure of tetany to develop in certain cases of bilateral thyroidectomy.

Vermont Medical Monthly, Burlington.

November.

98 *Tuberculous Faucial Tonsil. G. B. Sweeney, Pittsburg, Pa.
99 Adenoids and Catarrhal Disease of the Ear. N. C. Bullard, London, Eng.
100 Aid of the State Laboratory in Diagnosis and Treatment. B. H. Stone, Burlington.

98. Published in the *Denver Medical Times*, November, 1908.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

November 7.

1 *Massive Collapse of the Lung. W. Pasteur.
2 *Angioneurotic Edema as a Familial Cause of Sudden Death. A. J. Whiting.
3 Direct Examination of the Larynx, Trachea, and Esophagus by Brünings's Instrument. H. Tilley.
4 Venous Accommodation After Compression of the Superior Longitudinal Sinus by a Glioma. L. P. Phillips and G. E. Smith.
5 "Butika:" The Puerperal Diarrhea of Bengal. F. Pearse.
6 Palliative Treatment of Inoperable Cancer. H. L. Drage.
7 The Royal College of Surgeons of England. H. Marsh.

1. **Massive Collapse of Lung.**—After discussing the mechanism of respiration, Pasteur points out that the expanding force of the diaphragm is exerted mainly on the portion of the lungs lying below the great fissures—that is, on the lower lobes—and a consideration of the cases in which the diaphragm has become paralyzed shows clearly what happens to the lungs when this expanding force is in abeyance. Respiratory paralysis is a comparatively frequent complication of diphtheria, and when the muscles of respiration are involved in this disease it is rare for the diaphragm to escape. He discusses a series of autopsy findings in such cases. There is nothing distinctive in the physical signs themselves, and it is often only by considering a case in all its bearings that a diagnosis can be made. The signs of the paralysis of the diaphragm are well known. Pasteur refers to one symptom which does not appear to have attracted notice. Exaggerated action of the lower ribs occurs, in his experience, in the majority of cases, and is one of the early indications of diaphragmatic failure. It is generally most obvious when the paralysis is well marked, and invariably disappears when function is restored. He discusses the probable causes of this phenomenon. The mechanism of massive collapse differs materially from that of patchy or lobular collapse. Massive collapse is essentially an active process, lobular collapse a passive one, for the former is brought about by the active exercise of the elastic property of the lung, while the latter is generally believed to be caused by a passive removal of the air from portions of lung which have been cut off by bronchial occlusion from communication with the external air. He concludes that if it has not been actually ignored, the importance of massive collapse has been underrated, while its clinical significance has been for the most part overlooked. Active collapse of the lung is generally caused by paralysis of the muscles which are the direct distenders of the lungs—the diaphragm and the intercostals—but there are strong grounds for believing that reflex inhibition of diaphragmatic movement may lead to the same result, and that this observation may throw some light on the nature of the postoperative lung complications.

2. **Angioneurotic Edema.**—Whiting describes three cases and gives a clinical picture of angioneurotic edema. He notes its markedly hereditary tendency and points to it as a familial cause of sudden death. In Great Britain and Europe, generally, males appear to be more frequently attacked than females, the reverse of the condition obtaining in America. The symptom-complex consists of more or less sharply localized edematous swellings, affecting the skin and subcutaneous tissues, the mucous membrane and submucous tissues, and possibly other structures. A frequent manifestation is the occurrence of periodical attacks of severe intestinal colic, with sometimes nausea and vomiting. The attacks have a cyclical tendency. The condition is allied with Raynaud's disease, intermittent hydrops of the joint, probably with erythromelalgia and acroparesthesia. In several of these diseases, edemas have shown themselves. It may be confused with atypical cases of urticaria. The prognosis as regards life is favorable, except in the throat and in the skin near the mouth, whence it might pass by extension to the throat. Not much can be expected from treatment in the absence of a definite pathology. Among drugs mentioned are iron, arsenic and strychnin when general indications call for them. Great improvement has been noted under quinin; nerve sedatives have not proved satisfactory, and nitrites have been of doubtful value. Nitroglycerin has proved useful. Whiting has seen clear benefit from dry thyroid substance. In throat attacks, dram doses of tincture of perchlorid of iron, repeated if necessary every twenty minutes, have given relief. Sucking butter proved of service in one case. In dangerous attacks intubation or tracheotomy is indicated. Patients subject to or threatened with attacks of edema of the glottis should constantly wear an actual or potential tracheotomy tube.

British Medical Journal, London.

November 7.

8 William Mitchell Banks: His Life and Works. H. Morris.
9 *Value of Chromocystoscopy in Diagnosis of Renal Disease. W. F. Brook.
10 Cystic Disease of Kidneys with Pyuria and Hemorrhages. T. Carwardine and G. P. Bletchly.
11 Torsion of the Great Omentum and Habitual Partial Reduction *en masse*. E. M. Corner and L. Grant.
12 *Cancer in Travancore, South India. W. C. Bentall.
13 Postanesthetic Acetonuria, with Delayed Excretion of Acetone, After Childbirth. N. C. Forsyth.

9. **Chromocystoscopy.**—Brook discusses as a means of renal diagnosis the introduction into the blood current of pigments which are excreted by the kidneys and the observation by means of the cystoscope of their elimination by the ureters. It is simpler and more quickly conducted than either method of collecting the urine from the two ureters for examination, and is free from the objections and fallacies from which these suffer. The use of the separator, moreover, is not satisfactory without a cystoscopic examination. Chromocystoscopy is applicable in enlarged prostate and many other conditions in which other methods can not be practiced. The author describes cases in which by means of chromocystoscopy such questions as the following could be solved as preliminary to operative measures: In a case of a man formerly the subject of vesical calculus, there was tenderness but no pain in the left loin. The urine was acid, but showed no pus or albumin. Phthisical symptoms appeared. A skiagraph showed two ill-defined shadows, one at either pole of the left kidney. The following questions required answering before deciding on treatment: 1. What was the condition of the right kidney? 2. How far was the left kidney disabled? 3. How far was the general condition dependent on the lung mischief, and how far on the disease of kidney? Chromocystoscopy showed heavy blue-black jets issuing from the right ureteral orifice and none at all from the left. From the examination and the above-mentioned symptoms and history, it was possible to supply the following answers: 1. The right kidney was in good working order. 2. The left kidney was physiologically destroyed and the pelvis blocked, so that no pus found its way into the bladder. 3. In spite of the existence of the lung disease, that of the kidney, namely, suppuration behind a blocked ureter, was quite sufficient alone to account for the general condition. Brook thinks that the method is deserving of more extended recognition and general application than it receives at present, and urges that it should be included in the routine course of examination of all renal cases before operation, and of all abdominal tumors when there is the smallest possibility of their being of renal origin.

12. **Cancer.**—In a summary of 1,700 cases of cancer occurring in Travancore, India, Bentall arrives at the conclusion that the frequency of cancer of the buccal cavity and its absence in the rest of the alimentary canal is suggestive of a local cause for the former and of absence of digestive causes in the latter. He suggests that in the Hindoo the inveterate

habit of betel chewing from childhood possibly indicates a cause, due either to mechanical irritation or to a medium suitable for the growth of a possible cancer germ.

Medical Press and Circular, London.

November 4.

14 Treatment of Syphilis. G. P. Meldon.
15 Examination of the Throat and Nose. J. MacIntyre.
16 Surgical Treatment of Exophthalmic Goiter. A. Hildebrandt.
17 Rise of the General Practitioner. A. F. Penny.
18 Carcinoma in Mice. C. E. Walker.

Clinical Journal, London.

November 4.

19 Medical Cases in Surgical Practice. C. B. Lockwood.
20 Value of an Exclusive Proteid Diet in Certain Digestive Disorders. E. Young.

Australasian Medical Gazette, Sydney.

September.

21 *Mental Diseases from a Sociologic Point of View. A. Davidson.
22 *Arneth's Classification of the Neutrophile Leucocytes and Its Application in Pulmonary Tuberculosis. F. G. Griffiths.
23 *The Shelf Operation for Movable Kidney. C. MacLaurin.
24 Signs and Symptoms of Appendicitis. F. W. Doak.
25 Causation of Appendicitis. H. C. Hinder.
26 Operation for Acute Appendicitis. W. Chisholm.
27 First Six Years' Work at the Queen's Maternity Home, Adelaide. T. G. Wilson.
28 Midwifery Statistics. A. A. Hamilton.
29 Anesthesia in Labor. F. S. Hone.
30 Case of Toxemia of Pregnancy. A. H. Gault.
31 Various Types of Influenza. E. W. K. Scott.

21. Mental Diseases.—From an investigation at Callan Park Hospital for the Insane, Sydney, Davidson finds that the three main causes, numerically, were, (a) intemperance in drink, (b) heredity, and (c) domestic trouble. In this last doubtless the first two played a large part. Other causes were venereal diseases, fevers, epilepsy, phthisis, and the human epochal conditions—puberty, etc. He discusses each of the three major causes in detail. He agrees with Thomson that inheritance is usually a general, not a specific predisposition, though there are some instances of apparently precise and specific inheritance, and that there seems little warrant for believing in the transmission of acquired nervous disease. He points out that there seems to be an affinity or attraction between families with a tendency to nervous diseases. He quotes Dr. Charles Williams' five rules for the guidance of physicians when asked for an opinion as to the advisability of marriage, which may be summarized as follows: 1, No person should ever marry another of weak intellect, or who has been certified as insane; 2, two persons should never marry with a family history of insanity on both sides; 3, even when the family history of insanity is on one side only, it is exceedingly unwise to marry; 4, first cousins should seldom if ever marry; 5, no one should ever marry a sufferer from chronic epilepsy, even of the mild type. Beyond giving advice, however, it is difficult to see what can be done, unless statesmen are bold enough to intervene, and declare such marriages illegal and the children illegitimate. Davidson draws a striking picture of the rapid maturity and decline of certain young highly strung nervous children, which results in premature decay, possibly even imbecility, and urges that the thorough examination of school children might check some of these conditions. He considers it desirable that chronic alcoholics in all classes of society should be placed under control, whether they desire it or not. Again, syphilis, owing to its destructive effects on the brain, must be recognized as one of the chief causes of insanity. Like alcohol, it does not finish its ravages on the person affected, but is a hereditary disease unto the third generation and probably of a much more virulent type. He champions its causative relation to general paralysis and explains the fact of districts existing in which syphilis is very prevalent, while general paralysis is exceedingly rare, by the absence in these districts of the exciting cause. The two are associated more in large business centers, seaports, and places generally where life is more or less energetic, and are less associated in quiet, peaceful and uneventful rural districts, and among people of an easy-going character. He urges that syphilis should be a notifiable disease and that public establishments for its treatment should exist and be made widely known. In regard to the treatment of early cases of mental disease, he urges a legal clause, such as exists in Scotland and England, which allows persons to become voluntary patients, with the right of leaving with so many days' notice of their wish. An examination of the results of this method of Glasgow shows: 1, That the recovery rate of voluntary patients is greater than that of certified patients; 2, that the duration of treatment is shorter; and, 3, that in only a few instances does certification become necessary. He urges that patients should be carefully classified and different hospitals be established for: 1, The criminal insane; 2, the epileptic insane; 3, the senile insane; 4, imbeciles and idiots, with school education or those slightly impaired mentally, who might earn a livelihood; and 5, for chronic patients who have become "hewers of wood and drawers of water," in the biblical sense, and for whom an agricultural colony should be established. Such classes of patients should not be hopelessly muddled together.

22. Arneth's Classification of Leucocytes and Pulmonary Tuberculosis.—Griffiths considers that Arneth's work has not received the attention it deserves. He summarizes it and describes the technic. In regard to the stain, he points out that Arneth is very emphatic that Ehrlich's triacid stain should be used, but Griffiths prefers Jenner's stain, a modification of Romanowski's eosin and methylene blue stain, with which Arneth does not appear to be acquainted. If Ehrlich's stain is used, one must be careful to secure Ehrlich's triacid *farbung* and not the *trifarblösung*, which is a different preparation and not at all suited for the work. While the labor of Arneth's method is great, it is not so great as that of an opsonic estimation, and has over the latter two great advantages: Arneth's method is direct and absolute; its object is to determine one aspect of the state of the patient's blood, and this object it achieves. The opsonic method is indirect and relative; by it we determine not the absolute opsonic power of the blood, but the ratio of the opsonic powers of bloods of two persons, or of the blood of one person (the patient) and of the mixed bloods of a number of persons. Moreover, the opsonic index of a patient's blood may be doubled or halved in a couple of hours as the result of food, exercise or emotion, and so one can never know what it is, but only what it was some hours previously, and by the *time* the observation is completed it may be something very different.

23. Movable Kidney.—MacLaurin says that the operation which he now does for movable kidney is simply the formation of a shelf beneath the viscus. An incision is made from the tip of the twelfth rib downward and forward, which is deepened by muscle-splitting; the peritoneum is pushed forward; the canary-yellow fatty capsule of the kidney is stripped off and removed from its attachment around the hilum; the kidney is brought to the surface, split up the middle and examined; if found normal it is sewed up again, the peritoneum and Zuckerkandl's fascia are sewed to the fascia covering the quadratus lumborum with interrupted sutures of chromic gut, and the wound is closed.

Dublin Journal of Medical Science.

October.

32 Clinical Reports of the Rotunda Hospital (continued). E. H. Tweedy.
33 *Is Our Climate Changing? Sir J. Moore.

33. Continuity of Climate in History.—Moore discusses comparatively the various existing temperature records in the British Isles, which cover more or less the period from A. D. 1337 to date. From the facts admitted, he concludes that, within the past six centuries at all events, no appreciable changes have taken place in the climate of the British Isles.

British Journal of Children's Diseases, London.

October.

34 Cervical and Submaxillary Adenitis in Convalescence from Diphtheria. J. D. Rolleston.
35 Treatment of Chorea. J. Burnet.
36 Two Cases Suggesting Relationship to Status Lymphaticus. O. Kaufmann.
37 *Factors in Causation of the Neuroses. W. Jordan.
38 Prognosis of Heart Disease in Children. D. Stanley.
39 *Certain Types of Feeble-Minded Children and Their Significance. W. A. Potts.
40 Treatment of Congenital Dislocation of the Hip. F. Barnes.

37. **Causation of Neuroses.**—Jordan asks the following questions: 1. Is the nervous system of any child so congenitally defective that in spite of proper treatment and education from the first the child must grow up neurotic? The answer he believes to be yes, though, apart from actual imbeciles, of very few. 2. Is the nervous system of any child so congenitally perfect that no illness or error of training can render it neurotic? The answer to this he believes to be no. Both answers emphasize the importance of the postnatal causes of neuroses, of which he particularly discusses the habitual constipation of infancy and childhood and septic tonsillitis of the follicular or lacunar type.

39. **Feeble-Minded Children.**—It has appeared to Potts for some years that there is a close connection between the type of a feeble-minded child and its origin. This is not unlikely, for the offspring of tuberculous and syphilitic stocks are readily recognized, and there is no reason why the different types of feeble-mindedness should not have a definite heredity. The type greatly influences the prognosis. He considers in detail the Mongolian type, holding that these are essentially unfinished children, born when the procreative powers are at a low ebb; the simple congenital type, which, in his experience, is pathognomonic of an insane or feeble-minded ancestor; the neurotic type, which he has little doubt is pathognomonic of an alcoholic heredity; and the moral defective, in which the guide to classification is the social conduct. This type exists and its recognition is important. On the other hand, the author's observations in prisons have convinced him that only very few of those found there can plead this abnormality as a justification.

Journal of Laryngology, Rhinology and Otology, London.

November.

41 *Results of the Application of Barany's Tests to Deaf Mutes. A. R. Tweedie.
42 Examination into the Condition of the Vestibular Apparatus in a Series of Cases of Deafness of Nonsuppurative Origin. N. H. Pike.
43 *Antral Disease in Relation to Special and General Surgery. H. Tilley.
44 *Researches on the Anatomic and Pathologic Conditions of the Maxillary Sinus in Relation to the Teeth. A. S. Underwood.

41. Published in the *British Medical Journal*, Oct. 10, 1908.

43 and 44. Published in the *British Medical Journal*, Oct. 22, 1908.

Glasgow Medical Journal.

November.

45 Headache and Ocular Treatment. F. Fergus.
46 Obstetric Diary of William Hunter (concluded). J. N. Stark.
47 Vaccine Treatment of Infectious Diseases: (a) Chronic Acne Vulgaris; (b) Infection of the Urinary Tract; (c) Tuberculosis (with Opsonic Charts in the Vaccine Treatment of Tuberculous Disease). J. Miller.

Bulletin de l'Académie de Médecine, Paris.

October 27, LXXII, No. 34, pp. 285-292.

48 *The Intradermal Tuberculin Reaction. C. Mantoux and Hutinel.
49 Simple Technic for Dosage of Gases in Coal Mines. (Dosage exact du formène (grisou) et de l'oxyde de carbone dans les mines de houille par des procédés simplifiés.) N. Gréhant.

48. **Intradermal Tuberculin Reaction.**—Mantoux introduces the needle almost parallel to the skin, aiming to reach the under surface of the derma, and then injects one drop of a 1 to 5,000 solution of Pasteur Institute tuberculin. The local reaction is extremely characteristic and the technic can be made uniform more exactly than with certain other methods. He reports his findings with the test on 326 adults and 47 children, and the results of much experimental research. The technic is free from the dangers of the ocular reaction and is much more reliable, he states, than the ordinary cutaneous test. The specificity and sensitiveness have been proved in the clinic by comparison with autopsy findings and with the results of other tests and by the findings of the test on 70 cattle, 23 swine, 4 goats and 6 lambs, a total of 103 animals. Positive findings indicate the presence of a tuberculous focus somewhere and negative findings indicate with approximate certainty freedom from tuberculosis except in the moribund and in persons with measles or smallpox or recently vaccinated. The intradermal technic may also prove useful as a guide in tuberculin treatment, showing the sensitiveness of the patient.

Presse Médicale, Paris.

October 28, XVI, No. 87, pp. 689-696.

50 *Position Differentiation and Treatment of Atony and Dilatation of Stomach. (La méthode du renversement latéral droit dans les diagnostic et traitement des gastrectasies atoniques.) P. Carnot.

October 31, No. 88, pp. 697-704.

51 Identification of Meningococcus in the Nasal Fossa. Dopter and R. Koch.

November 4, No. 89, pp. 705-712.

52 Diet to reduce Proportions of Lime in Arterial Atheroma. (Régime décalcifiant dans l'athérome artériel.) M. Loeper and X. Gouraud.
53 Symptomatology of the Supraspinous Fossa: the Alarm Zone in Tuberculosis. (Séméiotique de la fosse sus-épineuse, zone d'alarme dans la tuberculose.) S. Chauvet.

50. **Diagnosis and Treatment by Change of Position of Dilatation of Stomach from Atony.**—As the patient stands, the atonic sagging stomach forms a low bag, the outlet of which, at the pylorus, is considerably higher than the level of the fluid contents in the stomach. If the patient then lies down on the right side, the fluid in the stomach flows down toward the pylorus, and if this opening is unobstructed the stomach soon empties itself. The splashing sound after an hour of erect position and its absence after the patient has been lying on his right side for an hour, help to differentiate the condition. The stomach may be able to evacuate its contents normally when they do not surpass a pint in amount, while a quart exhausts it completely. The stomach may also become transiently atonic during a period of worry or fatigue, regaining its normal tonicity afterward. These transient gastroplegias can be influenced frequently by appropriate therapeutic measures. Persons subject to them should refrain from loading the stomach so long as they have to be up and about, and should select food that will be promptly expelled, such as clear soups, with tapioca and beaten eggs, milk skimmed and sweetened with 1 gm. of sodium citrate to the quart, syrups and egg water. The more substantial meals should be digested reclining, in order to suppress the action of vertical pressure on the stomach, and to keep the pylorus at the lowest slope of the organ. The patient must recline on his right side, with the pelvis raised, lying down immediately after the evening dinner. If the raising of the pelvis is uncomfortable, it can be limited to an hour or so, commencing two hours after the meal. If other organs are involved in the ptosis, it is best to keep the patient in bed for a time to cure the reflex disturbances. Graduated motor and secretory gymnastics of the stomach by ingestion of increasing amounts of food—merely avoiding food with much waste—may have a very favorable influence. Recent research has shown that restriction of the diet has a tendency to increase the weakness of the stomach walls.

Revue de Gynécologie, Paris.

XII, No. 4, pp. 563-752.

54 Ulcerated Fibroma in Anterior Wall of Vagina. P. Hardouin.
55 Study of Uterovaginal Mucosa at Different Ages. E. A. Bjorkenheim.
56 *Psychic Disturbances in Ovarian Syndrome. Laignel-Lavastine.
57 *Cancer of Intestine and Foreign Bodies. (Cancer de l'intestin et corps étrangers.) J. Okinczyc and V. Combler.
58 *Anuria with Cancer of the Rectum. E. Papin.

No. 5, pp. 753-944.

59 *Immediate and Remote Results of Hysterectomy for Cancer of the Uterus. F. Jayle.
60 *Staphylococcus Infection of Genital Organs. H. Boshouwers.
61 *Inguinal Hernia of the Uterus. D. J. Cranwell.
62 Choice of Procedure in Radical Treatment of Inguinal Hernia in Adults. E. Forgue.
63 *Subphrenic Abscess. III. A. Catz and L. Kendirdjy. Commenced in No. 3.

56. **Mental Disturbances in Ovarian Syndrome.**—Lavastine discusses first the psychology at puberty. The mental confusion, melancholia or excitement, sometimes observed in girls and accompanied by other symptoms of ovarian insufficiency, such as headache and backache, asthenia and insomnia, is frequently cured by treatment with ovarian extract, thus testifying to the influence on the mental condition of the internal secretion of the ovary. The psychoses dependent on menstru-

ation are evidently of a toxic nature, as is demonstrated by their appearance at the approach and at the conclusion of the menses, by the toxicity of the menstrual flow and the increased toxicity of the blood at the approach of the menstrual period, and, further, by the benefit from ovarian treatment in the menstrual psychoses and also in others with exacerbations corresponding with dysmenorrheic periods. The thyroid may also play some part in the toxic syndrome; E. Thomas has reported a case of menstrual psychosis with periodically recurring goiter, exophthalmos and ophthalmia. The psychic disturbances of pregnancy may be simple elementary troubles or actual psychoses; in some of the latter the pregnancy is merely an occasional cause; in others, of toxic nature, the pregnancy is evidently directly responsible for the psychosis. The mechanism varies in different cases, in some there is evidently ovarian insufficiency; others with thyroid or parathyroid symptoms and enlargement of the thyroid, along with eclampsia and tetany, may be the result of disturbances in these glands. Postpartum psychoses are generally of toxic origin and streptococcus or anaërobic infection is generally responsible, a few cases being attributable to autointoxication from insufficiency of liver and kidney functioning or thyroid disturbances. The ovaries may occasionally be incriminated along with the sudden loss of the placenta with its internal secretion and, possibly, disturbance from an internal secretion on the part of the mammary glands. A tendency to lactosuria and compensating hypertrophy of the breasts seems to save certain women with insufficient thyroid functioning from myxedema; these cases sustain the assumption of an internal secretion. On the other hand, the ovaries are almost solely responsible for the psychic disturbances accompanying castration. The existing nerve balance in the women generally determines the severity of such disturbances. In women without appreciable nervous stigmata the psychic disturbances are generally elementary and yield readily to ovarian treatment, but in women predisposed by inherited or acquired taint, the psychoses are usually of the degenerate type, with the castration merely as an occasional cause, or else of the mental confusion type, toxic psychoses, of varying intensity. They can all be improved and some cured by treatment with ovarian extract. There are four types of acquired ovarian insufficiency: the nervous, congestive, nutritive and adipose. Congenital insufficiency is generally revealed by a suggestion of infantilism. Hyperfunctioning of the ovaries may be responsible for erethism, local pains, neuralgia, congestions and hemorrhages, but the five groups of symptoms of insufficiency include beside the classic "hot flashes" and tendency to congestions and hemorrhages, especially in the lungs, a tendency to obesity, modification in the genital sense and neurasthenia, with constant slight headache, buzzing in the ears, vertigo, frequent insomnia, nightmare, facial neuralgia, attacks of spasmodic suffocation, depression, palpitations, dyspeptic disturbances and modification of the mental state. The conditions in the menopause are essentially of the same nature as at puberty, with a tendency to sadness on account of encroaching age. The psychic disturbances characteristic of ovarian insufficiency are weakening of the memory, changes in character, irritability, even a tendency to hypochondria, ideas of suicide and general loss of energy with physical depression and nervousness—never actual psychoses.

57. **Intestinal Cancer and Foreign Body.**—Okinczyc and Combier report a case of a small cancer at the sigmoid flexure in which a prune stone was found imbedded. A foreign body arriving at a cancerous stenosis is liable to close the passage completely, the sudden severe occlusion from this cause being sometimes the first sign of the presence of the cancer. A number of such cases are on record, and the authors summarize some of them. The most remarkable is certainly Cruveilhier's case in which a woman presented long rebellious diarrhea, no occlusion, and at autopsy a cancerous stricture was found in the transverse colon and above it 617 cherry stones.

58. **Anuria with Cancer of Rectum.**—Papin reports a case personally observed and gives the details of four others that have been published in which anuria was a prominent complication of cancer of the rectum. In the personal case described the anuria was the first sign of trouble. It persisted for five days and was accompanied by rebellious diarrhea and later by vomiting. The bladder and prostate were examined through the rectum, but the cancer involving the rectum and sigmoid flexure was not discovered. As a kidney stone was surmised, nephrotomy was done. Papin urges examination of the ureters at autopsy in cases of rectal cancer, and remarks that uremia may be responsible for some of the symptoms in the terminal phase of these cancers. Anuria may result from direct compression of the ureters or from reflex action.

59. **Remote Results of Hysterectomy for Uterine Cancer.**—Jayle discusses 28 cases from his experience and states that the 5 patients with localized cancer of the body of the uterus have been cured for intervals of from 2 to 6 years, with the exception of one who died after the sixth year from unknown cause. Six with cancer of the cervix, without involvement of the broad ligaments, are in good health from one and a half to seven and a half years later. In 17 cases of cancer that had spread beyond the uterus, 5 of the women did not survive the operation and 9 succumbed within a year, while 3 are in good health from five to eight years since, and 3 have been lost trace of.

60. **Accidental Staphylococcus Infection of Genital Organs.**—Boshouwers relates a case of this kind in which he was able to cultivate the *Staphylococcus pyogenes albus* from a suddenly appearing infectious process in the vagina of a young woman. The same micro-organism could be cultivated from the well water used for bathing, and two little girls in the family also suffered from a similar vulvovaginitis.

61. **Inguinal Hernia of the Uterus.**—Cranwell recently found in a strangulated hernia an atrophied uterus with the adnexa on that side. He reviews a number of similar cases from the literature, adding that five cases are on record in which inguinal hernia in males contained a rudimentary uterus or adnexa. In the presence of an irreducible inguinal hernia whose contents are hard and the shape suggests that of the uterus, it is important to palpate through the vagina to determine whether the uterus is actually involved. Hernia of the uterus is frequently accompanied by malformation of the internal genital organs. If the contents of the hernia can not be reduced, it is best to remove the organ. Cesarean section was done in 5 cases in which the woman was pregnant; 4 of the mothers died and 1 of the children. In 2 other cases premature delivery was induced, with good results. He gives the details of the 44 cases on record besides his own.

63. **Subphrenic Abscess.**—In this third memoir Catz and Kendirdjy give the details of hundreds of cases, classifying and discussing the abscesses according to their location and etiology. The article is illustrated and presents a comprehensive study of abscesses of appendicular, gastric, duodenal, pancreatic, biliary, splenic, traumatic, tuberculous and thoracic origin, some of these types requiring much research on the part of the authors.

Revue de Médecine, Paris.

September, XXVIII, No. 9, pp. 765-860.

64 Subacute Form of Septicemic Phthisis. L. Landouzy and L. Laederich.
65 Theory of Aphasia and Dynamic Element. (Doctrine de l'aphasie. Comment je la comprends. Rôle de l'élément dynamique.) Bernheim.
66 Curable Subacute Encephalitis in the Tuberculous. J. Lépine.
67 *Serum Test for Syphilis in the Insane. (Réaction de Wassermann et aliénation mentale.) G. Raviart and others.

October, No. 10, pp. 861-940.

68 Two Cases of Fatal Typhoid Probably Contracted at the Hospital and Following Close on Acute Articular Rheumatism. Devic and Trouillieur.
69 Attenuated Non-suppurative Staphylococcemia. J. Caries.
70 Clinical Study of Relapsing Fever. (Etude clinique sur le typhus récurrent.) Lafforgue.
71 Intestinal Microbian Flora in Infants. L. Margain.

67. **Serum Test for Syphilis in the Insane.**—This communication confirms the differential value of the Wassermann test as the findings were positive in the syphilitics and in those with general paralysis and negative in the others, with scarcely any exceptions. The tests were made on the 400 inmates of the insane asylum at Armentières.

Semaine Médicale, Paris.

November 4, XXVIII, No. 45, pp. 529-540.

72 Proportion of Active Principle in Certain Drugs Prescribed in Various Forms. (Teneur comparée en principe actif de quelques médicaments chimiques.) P. Chapelle.

73 *Can Operation be Done for Extrauterine Pregnancy During Shock? (Peut-on opérer les grossesses extra-utérines durant la phase de shock?) R. de Bovis.

74 *Diagnostic Significance of Antitryptic Power of Serum. (Le pouvoir antitryptique du sérum a-t-il une valeur diagnostique?) L. Ambard.

73. **Immediate Versus Deferred Operation for Ruptured Tubal Pregnancy.**—The conclusions drawn by de Bovis from the evidence at hand to date are that it is not necessary to wait for the subsidence of shock before operating for ruptured ectopic gestation. The cases in which the hemorrhage becomes spontaneously arrested and those in which the forces are at such a low ebb that the slightest traumatism is fatal, are extremely rare. He advises early but not precipitate intervention except when the environment or other conditions contraindicate it, but warns that this does not mean that any physician at any time should feel justified in operating in case of ectopic pregnancy. The hemorrhage is usually slow and gradual, and there are thus a few hours at the physician's disposal to combat it. This is no reason for wasting time, for minutes count in hemorrhage, but it is a reason for not assuming too soon that the situation is desperate.

74. **Diagnostic Significance of Antitryptic Power of the Serum.**—Ambard discusses the property sometimes possessed by the serum to inhibit the action of trypsin and thus check digestion by the pancreatic juice. This antitryptic power was found especially pronounced in cases of cancer, and it was assumed for a time that it was pathognomonic of cancer, but later research has demonstrated this antitryptic power in a number of diseases and even in apparently healthy persons. He states that the proportion of pancreatic secretion found in the stools after a purge, by dosage of the fecal amylase, was nearly twice the normal proportion in two cancer patients. Other observers also have recently pointed out that the antitryptic power of the serum is much enhanced by injection of trypsin in animals and ingestion of pancreatic extract in man. Ambard concludes that the increased antitryptic power in all conditions is a sign of hyperfunctioning on the part of the pancreas. Lack of pepsin and a compensating hypersecretion on the part of the pancreas form a common link between cancer cachexia, nephritis and other conditions in which the antitryptic power of the serum is increased. The latter is thus an indication of excessive functioning on the part of the pancreas and thus proves a means of obtaining an insight into the workings of that organ.

Correspondenz-Blatt für schweizer Aerzte, Basle.

November 1, XXXVIII, No. 31, pp. 681-712.

75 Pharmacology of Bromin. (Pharmakologie des Broms und seiner Verbindungen.) E. Bürgi.

76 *Oil in Treatment of Stomach Affections. (Therapeutische Erfolge der Oel-Therapie bei Magenkrankheiten.) L. Rütimeyer.

77 Explorative Laminectomy and Circumscribed Serous Meningitis. C. de Montet.

76. **Oil in Treatment of Stomach Affections.**—Rütimeyer reviews the history of systematic treatment of stomach affections with oil, and describes his own experience with 100 cases. In some cases of hypersecretion and hyperacidity, with or without neurasthenia, the secretion was reduced when 30 gm. butter or 100 gm. warmed oil was taken fasting in the morning. In another case of threatening postoperative spasm of the pylorus, with extreme dilatation of the stomach, 100 gm. of oil poured into the stomach each morning, with lavage of the stomach twice a day promptly cured the spasm. In one case a merchant of 41 presented signs of chronic ulcer and spasm of the pylorus with excessive secretion and intense pains; only partial and transient benefit was obtained during two years of various measures. The old troubles returned at every excessive effort or excitement or dietetic error, and finally an operation was proposed. A systematic course of oil was instituted as a last resort, with brilliant success. The patient rinsed out his stomach every morning and then took 100 gm. of oil, and in two weeks the pains and spasms had vanished. The man gained rapidly in weight and was soon able to eat any ordinary food. During the five years since he still occasionally takes a little oil after some gross dietetic error, and it promptly relieves any slight disturbance. The most striking benefit of the oil treatment is in its influence on the subjective disturbances. The oil banishes the pain and restores the earning capacity, even although the objective findings may occasionally persist unmodified.

Deutsche medizinische Wochenschrift, Berlin.

October 29, XXXIV, No. 44, pp. 1881-1926.

78 *Prognosis and Treatment of Vasomotor-Trophic Neuroses. Cassirer.

79 Structure of Cerebral Cortex. (Aufbau der Hirnrinde.) H. Vogt and P. Rondoni.

80 *Polycythemia and Blood Pressure. (Polycythämie und Blutdruck.) S. Möller.

81 *Genealogical Tree of a Cataract Family. (Stammbaum einer Starfamilie.) Czellitzer.

November 5, No. 45, pp. 1921-1968.

82 *Comparative Pathology of Tuberculosis. (Zur vergleichenden Pathologie der Tuberkulose.) O. Lubarsch.

83 *Clinical Reliability of Serum Test for Syphilis. (Klinische Verwertbarkeit der Komplementbindungsreaktion für die Serodiagnostik der Syphilis.) F. Ballner and A. v. Decastello.

84 *Biologic Principle of Radiotherapy of Cancer. (Das biologische Prinzip der Lichtbehandlung des Krebses.) E. Diesing.

85 Aneurism Impeding Supply of Blood to Brain and Arms. (Mangelhafte arterielle Blutversorgung des Gehirns und der oberen Extremitäten bei Aneurysma arcus aortæ.) T. Rehberg.

86 *Prognosis and Treatment of Puerperal Infection. M. Henkel. Commenced in No. 44.

87 Caffein-free Coffee. (Coffeinfreier Kaffee.) E. Harnack.

78. **Prognosis and Treatment of Vasomotor-Trophic Neuroses.**—Cassirer discusses Raynaud's disease, erythromelalgia, sclerodermia, sclerodactylia, and Quincke's transient angioneurotic edema. All these affections are functional nervous disturbances, and all have a similar course with a tendency to recur with latent intervals. The prognosis is favorable in so far as there is seldom transition into an organic nerve or other trouble. At the same time the affection may recur at intervals for years and decades. There is also a close connection between these and other functional neuroses, neurasthenia and hysteria. The prognosis must therefore be guarded, as even if the vasomotor disturbance subside, complete restoration is rare. Treatment should aim first to avoid all causes that may induce the disturbance, cold water, handling cold damp articles and overexertion. In several cases of Raynaud's disease, Cassirer obtained good results with local hyperemia, winding the upper arm with a flannel bandage to induce venous stasis. This was done daily for half an hour during several weeks. This measure failed, however, in very severe cases. He is inclined to accept some connection between these neuroses and the arthritic diathesis. In the angioneurotic edema, regulation of the diet and of the bowels has often aided in the cure. Quinin and atropin may also prove useful, as well as arsenic. Especially disagreeable are the neurotic gastric symptoms, resembling the gastric crises of tabes, and sometimes so severe as to require morphin.

80. **Polycythemia and Blood Pressure.**—Möller concludes from his own experience and study of the literature that there is no direct connection between high blood pressure and the number of the blood corpuscles. Examination of 35 patients with a blood pressure of 180 mm. mercury and above, showed that only two of the patients had an unusually large proportion of red corpuscles.

81. **Family Tree for Studies of Heredity.**—Czellitzer gives some examples of a method of making out a family tree which is simple and very instructive. The male members of the family are represented by small squares and the females by circles, cross bars in the squares or circles showing the members of the family affected with the special feature being studied. Name, date, age, etc., can be written in each square or circle.

82. **Comparative Pathology of Tuberculosis.**—Lubarsch has been examining the calcified foci in human cadavers and in animals. He found tubercle bacilli still infectious in certain isolated, totally calcified foci in men, cattle and pigs, but this was very rare in human beings, while it was almost constant in cattle and in swine. He accepts this as evidence that the calcification process has a more curative tendency in man than in animals.

83. **The Serum Test of Syphilis.**—In the research described, special attention was paid to whether or not positive findings could be obtained with persons who were apparently entirely free from syphilis. This was the case in 17 out of 107. In several of these cases, however, the complement binding was transient. Blood from cattle, instead of sheep blood, permits a reaction exclusively specific for syphilis to be differentiated from a non-specific reaction which may be observed in various other affections.

84. **The Biologic Principle of Radiotherapy of Cancer.**—Diesing regards the pigment in the skin which forms under the action of sunlight as the preliminary stage of hematin, and thus of great importance for the metabolism. The ultraviolet rays stimulate these pigment-producing cells to functioning, and excessive stimulation is liable to lead to malignant proliferation. Light can thus induce the production of cancer, he says, but it can also cure cancer when applied in the form of Roentgen rays. He advises scarifying the skin over the cancer, opening up as many entering points for the Roentgen rays as possible. After removal of a cancer the part should be thoroughly treated with the Roentgen rays to destroy as many as possible of these pigment-producing cells below the site of the cancer. He is certain that the proportion of permanent cures will grow much larger when this is done as a routine measure.

86. **Treatment of Puerperal Infection.**—Henkel concludes his long article with the statement that serum treatment is unreliable in severe cases of puerperal sepsis and pyemia. They require unconditionally surgical measures; only by this means is there a chance to combat the consequences of severe puerperal infection. Early extirpation of the uterus is required for puerperal sepsis, and ligation of the thrombosed veins, at the right time, in puerperal pyemia. The Trendelenburg and Bumm technics are the only ones for the latter, and he prefers Bumm's transperitoneal method on account of its simplicity and the ample oversight it allows. The ovarian vessels are ligated and excised, the stumps cauterized with the actual cautery, the iliac vessels are ligated and the sheets of the peritoneum are sutured. The crucial point is the decision as to the proper moment for operating. This is when the thrombosed vein can be distinctly palpated, eventually under general anesthesia. No operation should be attempted, he says, if an exudate has formed around the thrombosed vein, as in this case streptococci are already present in the infiltration and a transperitoneal operation is too dangerous. In dubious cases the general anesthesia is of great importance, as it allows the normal tubes and ovaries to be palpated and thus to be excluded from the clinical picture. Analysis of the unsuccessful cases on record shows that the operation came too late. It is important to seek for a middle iliac vein; one is sometimes found between the external and internal iliac veins. He reports an instructive case, another to add to the "too late" category. Intervention a little earlier might have saved the patient.

Medizinische Klinik, Berlin.

October 25, IV, No. 43, pp. 1633-1668.

88 *Industrial Morphin Poisoning. (Die gewerbliche Vergiftung der Haut durch Morphin und Opium.) L. Lewin.
89 *Symposium on Pernicious Anemia, von Noorden and Strümpell.
90 *Hysteria and High-Frequency Electric Currents. (Hysterie und Hochfrequenzströme, nebst Bemerkungen zur Pathogenese der Hysterie.) M. Kahane.
91 *Advantages of Zinc Gelatin Dressings in Surgical Affections. H. Hecker.
92 Roentgen Diagnosis and Treatment of Upper Air Passages. (Weitere Mitteilungen über Röntgentherapie und-Diagnostik in den oberen Luftwegen.) Mader.
93 Complement-Binding Test Applied to Epidemic Meningitis. W. Schurmann.
94 Results of Experimental Research on Heredity. (Einige Ergebnisse der experimentellen Vererbungslehre.) E. Baur.

88. **Industrial Morphin Poisoning.**—Lewin's patient was a man of 64 who had worked for thirty-four years in a chemical factory, for the last twenty-five years being engaged in the making of apomorphin. Last August he was employed in the morphin room, and had occasion to wash some cloths which had been used for filtering morphin. His hands itched at once and a severe dermatitis developed on the arms, resisting all treatment for two years; he died before the close of the third year. Lewin testified that the case was a classical example of an industrial poisoning accident and the family was awarded an indemnity.

89. **Pernicious Anemia.**—Continuing this symposium on pernicious anemia, von Noorden says that about 40 or 50 per cent. of the cases terminate in recovery, and that even the malignant cases have remarkable fluctuations. He has found arsenious acid the most reliable drug, and remarks that the patients need warmth, sunshine and fresh air. Mountain climate has done harm rather than good in his experience. Strümpell ascribes great importance to the differentiation of pernicious anemia from latent cancer of the digestive tract, and thinks that this is possible by determination of megalocytosis and the higher color index. Both these are processes of compensation which are nearly constant with pernicious anemia, while they are exceptional with secondary carcinomatous anemia. The discovery of megaloblasts speaks for primary essential anemia, as also a pronounced reduction in the numbers of white corpuscles, especially of the myeloid elements, while the lymphocytes are relatively increased. With cancer there is generally leucocytosis. Small doses of phosphorus have sometimes proved beneficial in his experience, and he adds that saline transfusion or Ziemssen's injections of blood deserve further trial, as they may have a stimulating action on the bone marrow.

90. **Peculiar Reaction to Electric Energy in Hysteria.**—Kahane is in charge of the Institute for Physical Therapeutics at Vienna, and has been studying for years the therapeutic action of high-frequency currents. As a rule, he says, their local application has a vasoconstricting, secretion-checking action, while pain and itching are reduced. Their general application has a soothing effect in most cases, and this sedative action has proved very beneficial in neurasthenia. On the other hand, in hysteria the high-frequency currents invariably produced the reverse of their customary effect. In every case the condition was immediately aggravated and an attack brought on in the monosymptomatic cases. After the general d'Arsonvalization the hysteric patients complained of disagreeable sensations in their limbs, and it seemed as if the balance in the nervous system had been upset. This peculiar and unprecedented reaction to the high-frequency currents suggests the possibility that the condition known as hysteria may result from modification in the nervous system affecting its reaction to certain forms of electric energy.

91. **Zinc Gelatin Dressing for Leg Ulcers, Varices and Joint Affections.**—Hecker has found Unna's zinc gelatin dressings useful in treatment of these troubles, as it counteracts the tendency to stagnation in the circulation, while it gives an unfailing support and does not interfere with the patient's business. Other advantages are that it is inexpensive and clean, and can be applied by any practitioner and does not require renewing for weeks. Unna's formula has never been improved on, he says:

R			
Zinci oxidatis.			
Gelatini	āā	10	or 3iiss
Glycerini.			
Aquæ destillate	āā	40	3x
Ichthyolis		2.5	gr. xl

The leg is scrubbed and shaved, then cleansed with ether or benzin and the gelatin preparation, softened by warming, is spread on the entire leg except at the site of the ulcer. A strip of cotton is then laid below the knee and above the toes and two starched roller bandages about ten yards long and four inches wide are wound around the leg from the toes up, leaving the toes exposed for control of the circulation in the limb. The secret of success is to have the bandage wound so as to exert a strong, even pressure. This "skin splint" is cut off with plaster shears when renewal is deemed necessary, once in three weeks at first, but later not for four or six weeks. If the stiff bandage binds at any point, all that is necessary is to moisten this part with warm water and it will soften and adapt itself to the surface as desired. He has found that old rebellious ulcers begin to heal at once under this treatment, and that the scars are stronger and firmer than with any other technic. He has found these gelatin dressings useful also in cases of effusions in the joints and as an aid in various surgical procedures.

Münchener medizinische Wochenschrift.

October 27, LV, No. 43, pp. 2217-2264.

95 *The Function of the Placenta. P. Bergell and E. Falk.
96 *Resistance of Paratyphoid Bacilli of Type B in Dried Human Stool. (Resistenz von Bazillen des Typus Paratyphus B. in ausgetrockneten menschlichen Darmentleerungen.) O. Mayer.
97 Lightning Treatment of Cancer. (Fulgurationsbehandlung maligner Tumoren.) K. Schultze.
98 *Dangerous Consequences of Ocular Tuberculin Reaction. (Gefährliche Folgen der Calmetteschen Ophthalmoreaktion.) P. Schrumpf.
99 Incarceration of Hernia by Subperitoneal Lipoma. (Einklemmungserscheinungen bei Fettbrüchen.) W. Sachs.
100 Treatment of Traumatic Effusion in the Knee. (Behandlung des Hydrops genu traumaticus.) Hartleib.
101 Atropin for Incarcerated Hernia. H. Rabl.
102 Early Diagnosis and Treatment of Bronchiectasis. G. Beldau.
103 Urethrotelescope. (Ueber einen neuen optischen Apparat zur endoskopischen Untersuchung der Harnröhre.) R. Kaufmann.
104 *Habitual Malignant Jaundice in Newborn Infants. (Ueber den habituellen Ikterus gravis der Neugeborenen.) J. Pfannenstiel.
105 *Are Physicians Justified in Taking Pay from Manufacturing Chemists for Scientific Tests of Pharmacologic Preparations?

95. Function of the Placenta.—Bergell and Falk report research which demonstrates that the placenta is an organ participating in the metabolism, regulating the metabolism in the fetus.

96. Paratyphoid Bacilli.—Mayer presents evidence to prove that paratyphoid bacilli retain their vitality in dried human stools for a year and a half if protected from sunlight. He ascribes to this long resisting power several endemics in his experience.

98. Evil Consequences of the Ocular Tuberculin Reaction.—Schrumpf describes two cases in which instillation of tuberculin in the eye of a drop of a 1 per cent. solution of "old" tuberculin induced inflammation, which was very long in healing and left permanent opacity of the cornea in one case. The patients were women of 65 and 81, and the parenchymatous keratitis induced resembled very much ordinary tuberculous inflammation of the cornea. He cites further 23 authors who have published reports of disturbances in consequence of the tuberculin instillation, ranging from intense conjunctivitis to keratitis with or without involvement of the iris. In both of his cases the eyes were previously certainly sound. Another disadvantage of the ocular reaction is that the eye process is liable to flare up again if a course of tuberculin treatment is instituted. A positive reaction to the tuberculin instillation has also a depressing influence on the patients.

104. Habitual Malignant Jaundice.—Pfannenstiel applies this term to the cases in which several infants in turn in the same family develop malignant icterus soon after birth. He has had a case of this kind in his own practice and learned of two more in his district, and has found a few on record. In his case a healthy young woman had four children, born in the course of four years, all apparently healthy and well developed, and yet the last three all died in a few days from malignant jaundice which developed soon after birth. Large quantities of dissolved bile pigment were passed in the urine; the stools were colored with bile, but the infants presented peculiar meningitic symptoms which increased and subsided in waves, with opisthotonos and tonic spasms of the arms, and the various mucosæ showed a tendency to catarrhal discharges of a yellow tint. The only difference noticed in the different children was the amount of resistance they were able to oppose to the affection, some lasting longer than the others before succumbing to the malignant affection. The first-born never displayed the tendency to jaundice and has always been healthy. The findings at the autopsy of each of the jaundiced children are described in detail, and the cases in the literature are reviewed and compared with them. In some cases this habitual jaundice has been observed up to nine times in one family, but healthy children may grow up healthy between the jaundice children. He does not believe that there is any essential difference between the mild form of this habitual jaundice and the so called "physiologic icterus" of the new-born. Syphilitic infection was not present in any of the cases to date, and other infections are scarcely probable. When jaundice is observed in an infant energetic measures to eliminate the toxin are indicated at once. Diuresis should be stimulated by giving the child as much water or fennel tea as possible, with the meals or alternating with them. An alkaline water might prove useful. Subcutaneous infusion of saline solution, from 100 to 150 c.c., should be given, repeated if necessary. Warm baths with cool douches are indicated to stimulate the circulation and the functioning of the skin. Small doses of calomel at the beginning may be useful, later cautiously rinsing out the intestines with chamomile tea, keeping the child warm and protected from bright light and noises as it is very sensitive and wakes readily. Breast feeding is imperative, not allowing much at a time to avoid stimulating the secretion of bile. Once in four hours is often enough if water is given copiously in the interim. Treatment otherwise must be symptomatic, combating the tendency to hemorrhage sometimes observed. In one of the children in his experience hemorrhage from the umbilical cord persisted unmodified until after an injection of gelatin. By application of treatment along these lines one of the children survived for three weeks, and if the affection had been a trifle less severe might possibly have recovered. He urges further research on the jaundice of the new-born on the part of obstetricians, pediatrists and pathologists.

105. Pay for Trials of New Drugs.—A previous summary of the action of the German Medical Press Association on this subject was given in THE JOURNAL, November 7, page 1613. The editor of the Munich weekly takes a more decided and extreme stand than the other members of the association, and here reiterates his contention that the principle should be upheld denouncing acceptance of remuneration from the manufacturers for trials of pharmaceutic preparations in the clinic. By surrendering this principle, he says, the struggle against fake medical write-ups is rendered immeasurably more difficult.

Wiener klinische Wochenschrift.

October 29, XXI, No. 44, pp. 1367-1414.

106 Address at Dedication of Hygienic Institute. A. Schattenfroh. Id. R. Paltauf.
107 Research on Anaphylaxis. E. P. Pick and T. Yamanouchi.
108 Opsonins and Their Importance for Tuberculin Treatment. M. Lamb.
109 *Serum Diagnosis of Syphilis. (Weitere serodiagnostische Untersuchungen bei Syphilis.) S. Grosz and R. Volk.
110 Precipitin Test for Biologic Research on Feces. (Biologische Untersuchung des Kotes.) E. Brezina and E. Ranzi.
111 Value of Consumption of Oxygen as Test for Water. (Verwertbarkeit der Sauerstoff-Zehrung in der Methodik der Wasser- und Abwasser untersuchung.) E. Brezina.
112 *Sensitizing Action of Animal Pigments and Its Physiologic Significance. (Die sensibilisierende Wirkung tierischer Farbstoffe und ihre physiologische Bedeutung.) W. Hausmann.
113 New Eye Reflex: Disappearance of Radial Pulse During Pressure on Eyeball. (Ein bisher noch nicht beschriebener Reflex vom Auge auf Kreislauf und Atmung.) B. Aschner.

109. Serum Diagnosis of Syphilis.—Grosz and Volk report the results of the serum test in 178 cases, including 124 syphilitics. The later history of the patients in connection with the findings confirm the extremely valuable and reliable information to be derived from the test when the findings are positive, but negative findings are inconclusive.

112. Sensitizing Action of Animal Pigments and Its Physiologic Significance.—Hausmann announces that bile has a powerful photodynamic action. Red blood corpuscles mixed with bile and exposed to the sunlight rapidly disintegrate, while a similar solution kept in the dark remains unchanged. A concentration is used for the tests free from hemolytic action as long as it is not exposed to the sunlight. Hematoporphyrin has a still more pronounced sensitizing action than bile alone. He is inclined to believe that these substances, like chlorophyl, exert their sensitizing action only at certain points and are otherwise inert, like the photographer's sensitizing substance, which is inert so long as he keeps it in its jar; it displays its specific power only when spread on the photographic plate. In studying the effect of light on the organism, the possibility of a sensitizing action from some of these substances must be borne in mind, he says. An insufficiency of the sensitizer or an excess may be one of the factors in certain skin affections; bacterial products may also have a sensitizing action. Possibly, he suggests, the action of mountain climate may have something to do with these sensitizing factors.

Zentralblatt für Chirurgie, Leipsic.

October 31, XXXV, No. 44, pp. 1289-1320.

114 *Method of Sterilizing the Skin for Operations. (Neue Sterilisierungsmethode der Haut bei Operationen.) A. Grossich.
115 *Explanation of Postoperative Spastic Occlusion of Intestine. (Zur Erklärung des postoperativen spastischen Darmverschlusses.) F. Franke.
116 *Fatal Bismuth Poisoning. (Wismutvergiftung durch Injektionsbehandlung nach Beck.) H. Eggenberger.

114. **Improved Method for Sterilizing the Skin.**—Grossich applies a 10 or 12 per cent. tincture of iodin to the field of operation and to disinfect the skin around, without any preliminary scrubbing with water. His microscopic studies have shown that the tissues take up the iodin much more readily when they are dry, and that it penetrates deep into all the nooks and crevices, which does not occur with the usual preliminary scrubbing with soap and water. The water macerates the epidermal cells and they swell and plug the openings. He relates his experiences with this technic, especially in a large number of cases of open crushing wounds in laboring men. The parts are shaved, dry, and then painted with the tincture of iodin, and a sheet is then laid over the naked patient with a hole over the field of operation—the sheet fastened to the skin with a few small clamps and reaching to the floor all around. After the patient has been anesthetized, the field of operation is painted a second time with the tincture of iodin and the completed suture is swabbed anew with it. He has never witnessed any by-effects from this technic, not even when a third of the body was painted with the iodin. This technic he is convinced eliminates all danger of infection from the patient. He applies it only when the wound is still entirely free from signs of inflammation such as redness and swelling. If the tincture of iodin is applied after the parts have been recently scrubbed with soap and water, there is liable to be suppuration; it is indispensable that the tissues should be dry when the iodin is applied for this purpose.

115. **Postoperative Spastic Intestinal Occlusion.**—Franke ascribes postoperative ileus to a traumatic neurosis of the intestines, and cites a number of arguments to sustain this view, remarking that the trauma may be either mechanical or psychic. He has observed cases in which the postoperative ileus developed after fixation of a wandering spleen, the intestines not being involved in the operation at all. In one case, the occlusion occurred before the operation had been commenced, and subsided spontaneously later. He has also observed cases in which this form of ileus was undoubtedly the result of the action of belladonna or physostigmin, given to stimulate peristalsis, but possibly in too large dosage. The ileus subsided completely in two such cases in his recent experience when the drug was suspended.

116. **Bismuth Poisoning from Local Injection in a Fistula.**—Eggenberger injected 30 gm. (450 grains) of 50 per cent. bismuth vaselin into a spondylitic fistula in the abdomen of a boy of 7. He had applied this treatment with good success in several cases previously, following Beck's directions. The bismuth vaselin was left in the fistula and the boy grew puny after six weeks, with a stomatitis suggesting mercurial poisoning, and with ulcerations on the gums and lips. On the assumption of bismuth poisoning, the abscess was opened and evacuated, but the symptoms progressed, the syndrome resembling the picture of uremic toxic irritation of the cortex, and proving fatal in a few days. Autopsy revealed punctate hemorrhages in the stomach mucosa and an ulceration in the cecum, with the mucosa and the brain cortex hyperemic throughout.

Zentralblatt für Gynäkologie, Leipsic.

October 31, XXXII, No. 44, pp. 1141-1164.

117 *Cure of Dysmenorrhea and Amenorrhea Under Tuberculin Treatment According to K. Spengler. (Tuberkulose und Menstruation.) K. Eisenstein and J. Hollos.

117. **Relations Between Tuberculosis and Menstruation.**—Eisenstein and Hollos report experiences which seem to show that the ovarian system regulating menstruation reacts most sensitively and intensely to the influence of tuberculous toxins so that the great majority of tuberculous women suffer from irregularities in menstruation. They further assert that tuberculin treatment has a most remarkable influence on these menstrual irregularities and pains, promptly restoring conditions in the menstrual sphere practically to normal. Their statements are based on 118 cases; most of these tuberculous women were taking a systematic course of tuberculin treatment according to Spengler's technic. Spengler believes that tuberculosis is of the human type in some and of the bovine type in other patients, but that both types participate in most cases. He aims to treat the patients with the opposite type from that with which they are infected. In 70 women with dysmenorrhea out of the total 118, the improvement in the menstrual conditions occurred with promptness and energy. In 16 out of 22 women with severe dysmenorrhea from the first inception of menstruation the pains vanished entirely under the tuberculin treatment. Still more striking was the return or onset of apparently normal menstruation in 14 cases of amenorrhea. In some cases this effect occurred in one and in others in two or three days after the first injection of tuberculin. Eisenstein and Hollos called attention last year to the remarkable cure of dysmenorrhea in 10 women taking a course of tuberculin treatment.

Gazzetta degli Ospedali e delle Cliniche, Milan.

October 25, XXIX, No. 128, pp. 1373-1388.

118 *Electrocardiograms in Diagnosis of Heart Affections. (Intorno alle correnti di azione del cuore.) G. Galli.
119 Roentgen Examination of Tracheal Glands. (Ricerche röntgenologiche nell'adenopatia tracheo-bronchiale.) F. Laureati.
120 Differentiation of Tuberculous Sputum with Millon's Reagent. (Diagnosi differenziale fra sputi tubercolari e quelli di altra natura per mezzo del reattivo di Millon.) G. Salmoni.
121 Differentiation of True and False Mitral Stenosis. (Del pseudo-restringimenti mitralici funzionali e dei rumori cardiaci anorganici in genere. Nuovo metodo di esame dello stato funzionale del cuore.) F. Pedrazzini.
122 Erythromelalgia. (Eritromelalgia o neuralgia rossa.) P. Romeo.

118. **Electrocardiograms.**—Galli gives an illustrated description of the method of recording the movements of the heart by the string electrometer which registers the electric currents generated in the heart muscle by each contraction. The tracings of these "action currents" form the electrocardiograms, and they afford better insight into the functioning of the heart, it is claimed, than any other means of investigation at our disposal. Einthoven has been mainly instrumental in perfecting this technic.

Policlinico, Rome.

November 1, XV, Practical Section, No. 44, pp. 1381-1412.

123 Application of the Cutaneous and Ocular Tuberculin Reactions, Agglutination Test and Opsonic Index in Diagnosis of Surgical Tuberculosis. (La siero-agglutinazione, la cutireazione, l'oftalmo-reazione e la ricerca dell' indice opsonico nella diagnosi della tubercolosi chirurgica.) M. Cappelli.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

SURGERY, ITS PRINCIPLES AND PRACTICE. By various authors. Edited by William Williams Keen, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, and John Chalmers DaCosta, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Vol. IV. Cloth. Pp. 1194, with illustrations. Price, $7.00. Philadelphia: W. B. Saunders Co., 1908.

TRANSACTIONS OF THE SIXTH ANNUAL CONFERENCE OF STATE AND TERRITORIAL HEALTH OFFICERS WITH THE UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE. Washington, D. C., April 27, 1908. Cloth. Pp. 79. Washington: Government Printing Office, 1908.

LEITFADEN DER HYGIENE. Von Aug. Gärten, O. ö., Professor der Hygiene und Direktor des hygienischen Institutes der Universität Jena. Fifth Edition. Paper. Pp. 634, with illustrations. Price, 7.60 marks. Berlin: Verlag von S. Karger, 1909.

SIXTEENTH ANNUAL REPORT OF THE CHESTER COUNTY HOSPITAL TOGETHER WITH FIFTEENTH ANNUAL REPORT OF THE WOMEN'S AUXILIARY, 1907-1908. Paper. Pp. 49, with illustrations. West Chester, Pa.: Horace F. Temple, Printer, 1908.

PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS. By John C. DaCosta, Jr., M.D., Associate in Clinical Medicine, Jefferson Medical College. Cloth. Pp. 548, with illustrations. Price, $3.50. Philadelphia: W. B. Saunders Co., 1908.